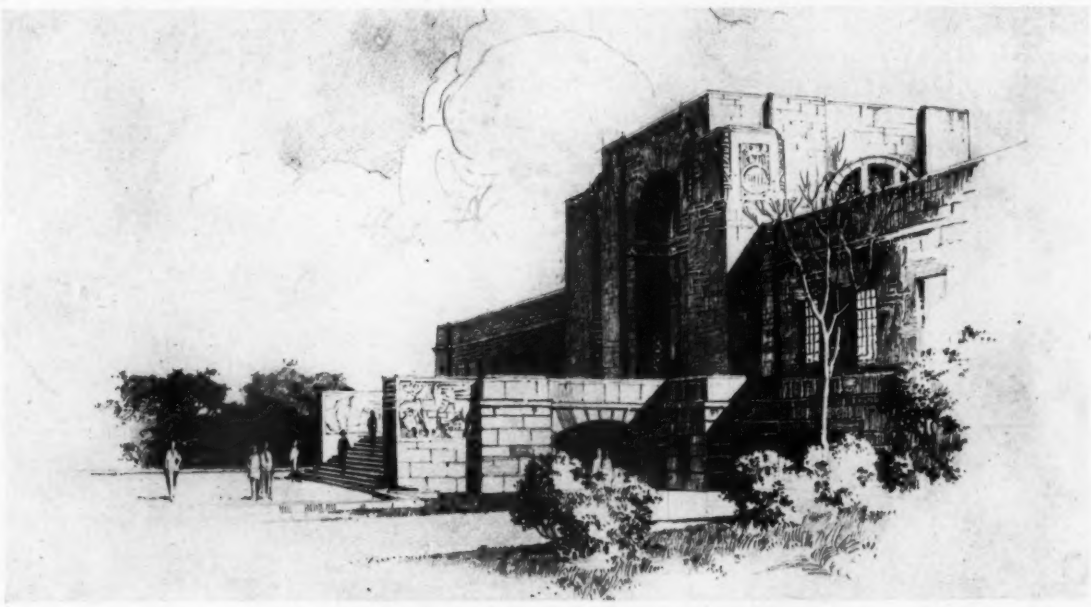
THE AMERICAN ARCHITECT
The ARCHITECTURAL REVIEW

VOL. CXXI WEDNESDAY, MAY 10, 1922 NUMBER 2393



View of Main Entrance, Showing Covered Automobile Entrance

THE NEBRASKA STATE CAPITOL

BERTRAM G. GOODHUE, Architect

GROUND was broken during April for the new capitol for the state of Nebraska. Five millions have been appropriated for its erection. Contracts will be let during the summer, in time to insure the completion of this work before the close of 1925. The site is in the original ten acre square which was selected for the purpose when the capitol was erected on the prairie "at a city to be called Lincoln."

The Nebraska capitol marks a radical departure in American state house architecture. The plan was secured through a series of competitions given under the auspices of the American Institute of Architects. Three Nebraska men were selected in a preliminary competition in which the economic and political aspects of the problem were considered as well as architectural requirements. Seven firms of national reputation outside of Nebraska joined in the competition, which resulted in June, 1920, in the selection of Bertram G. Goodhue of New York as the architect of the commission.

For a year after the adoption of the Goodhue plan it was studied and restudied, not only by the architect and his staff but by the commission and by the public. Some changes have been made but the essence of the first design remains in all its original simplicity and dignity, promising a public building of unusual strength and beauty as well as economy of space and low operating costs.

The capitol consists of a building approximately 440 feet square. It will have a basement below the grade, a first floor forming a terrace entirely around the building, and a main floor bring-

(Copyright, 1922, The Architectural & Building Press, Inc.)

XUM

ing the parapet to a height of 51 feet from the ground level. The chief feature of the structure is a tower rising from the center to a height of 400 feet. This tower, surmounted by a colossal figure called "The Sower," will be seen, it is estimated, from thirty to forty miles from every direction. The tower will be 80 feet square at the base and will taper only slightly as it rises, a square, severe shaft, pierced on each of its four sides by long continuous windows and terminating in a graceful dome of colored or gilt tile. The object of the architect in making this feature was to furnish the comparatively flat state of Nebraska with an elevated building which could be at once an object of beauty and a source of inspiration.

But while this architectural feature will distinguish the building and make it different from

Main Front of the Building from Fifteenth Street

The archway is 25 ft. wide by 50 ft. high. Above the doorway is a panel in high relief symbolizing the coming of the pioneers. Above this panel is one of the three semi-circular and grilled windows that admit light to the vestibule. On either side this arch is buttressed by pylons on the two outermost of which are two low relief panels, one of the arms of the United States and the other the arms of the State of Nebraska, while the two inner ones terminate in majestic engaged figures of tremendous scale, representing the four attributes of the law, as named in the inscription in the center and above the whole

"Wisdom, Justice, Power, Mercy
Constant Guardians of the Law."

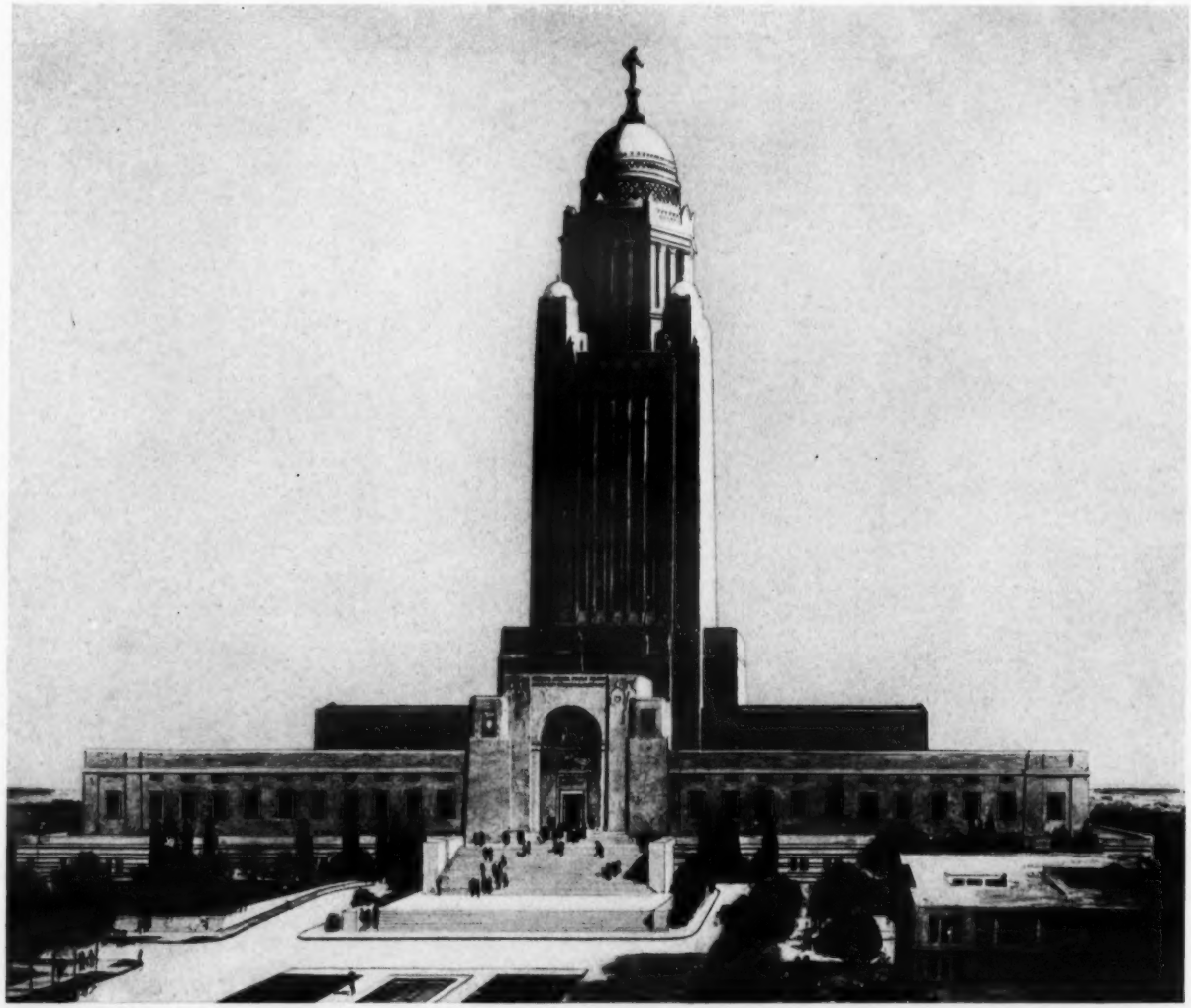
all other capitols, it is also utilitarian to the very top. The lower portion of the tower will contain the main rotunda. Above the roof it will carry a dozen floors of offices, housing many of the state departments and providing room for an indefinite expansion of the storage space for the state library. At the top, underneath the dome, will be located the war trophy room. This will be a magnificent apartment with space to store in permanent safety the battle flags and other relics left over from the

Looking Along the South Front from the Terrace

This terrace is 20 ft. wide and extends completely around the building, giving access to the second or main floor. Within the central mass is the Supreme Court Room and on the floor above the reading room of the Law Library. The three-quarter length figures that occur between the windows and at the corners of the pylons represent the following outstanding law-givers: Minos, Hammurabi, Moses, Amenophis, Solon, Solomon, Cæsar, Justinian, Charlemagne, Napoleon

Civil War, the Spanish and Philippine wars and the recent conflict.

The tower, a strictly utilitarian feature, is the most striking feature of the Goodhue plan, but is by no means its only excellence. The basement and first floor will house the service features and many of the state departments. The chambers which distinguish such a building will be found on the main floor. Entering from the north by a broad flight of stairs, the visitor finds himself in the hall of state, a vaulted apartment approximately fifty feet high, and containing niches for statues and spaces for inscriptions and mural paintings. At the left will be a series of rooms for the governor. Passing directly to the center of the building and standing in the rotunda the visitor will have at his right a well designed senate chamber and at his left a somewhat larger apartment for the house of representatives. In front he will see the doors leading to the supreme court rooms with the state library immediately above.



The Nebraska State Capitol Building

Bertram G. Goodhue, Architect

The building is in the form of an exact square of which each face is 437 ft. long including the terraces. The greater part of the exterior is low (two stories and attic, with basement underneath) broken at the center of each side by a somewhat higher mass, each of which is the termination of a cross-shaped structure from the center of which raises a great tower, 80 ft. square and 400 ft. high from the ground to the top of the figure on the dome

Four courts opening to the sky admit light and air to the interior. The arrangement is such that every office in the structure opens either upon the outside or upon one of these courts. The library and the chambers of legislation are lighted by clerestory windows. Even the rotunda, which in practically all capitols must be illuminated, artificially, receives direct light from the windows cut into the tower as it emerges from the roof. The feature of the design is that it covers so much ground and has so large a capacity without requiring artificial lighting in any of the departments.

Governor's Reception Room

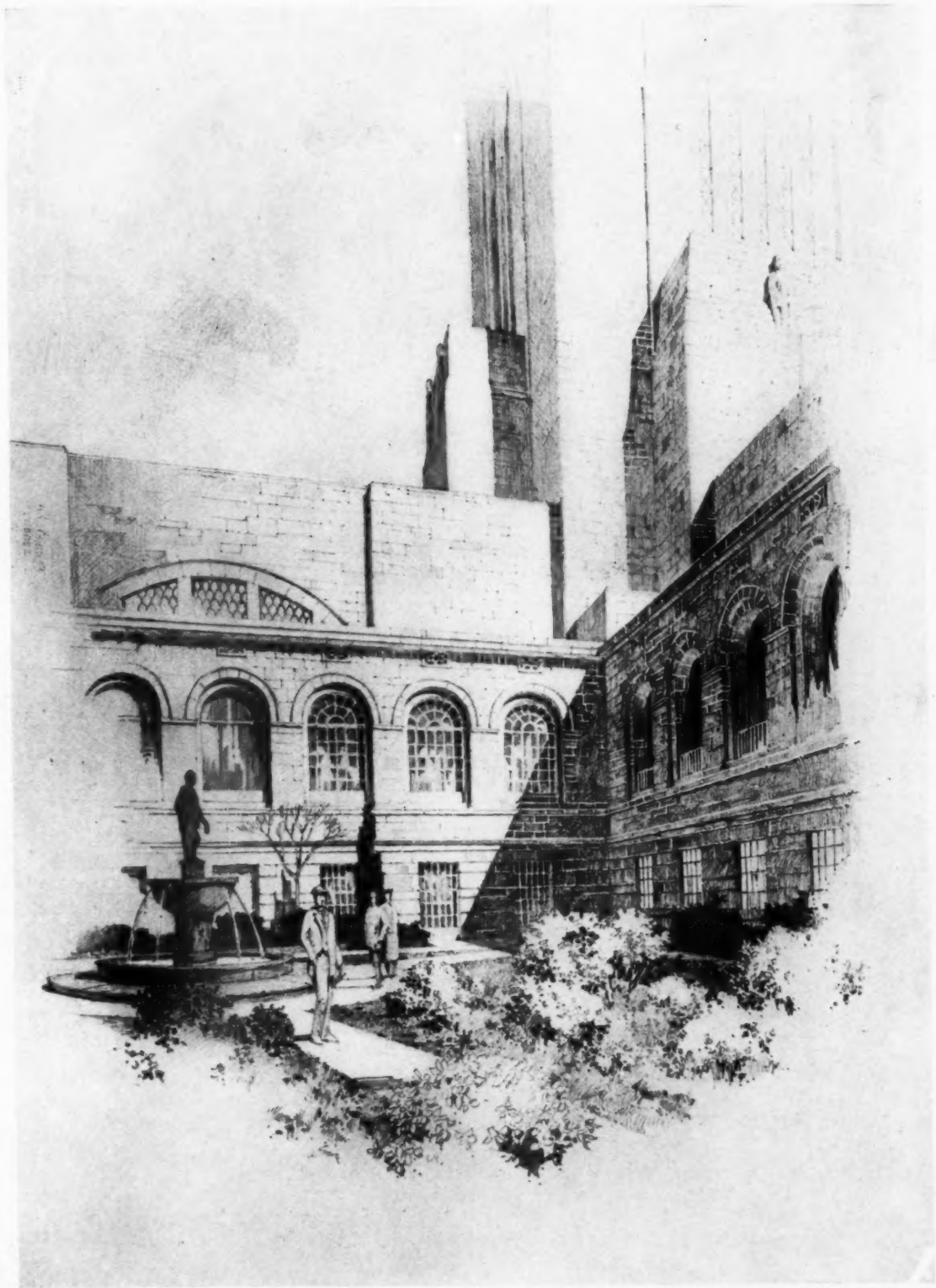
The style of architecture employed is simple and dignified. It departs from tradition but does not become futuristic. Nothing is employed, in fact, but well established forms. Simplicity is the keynote. Such criticism as has been offered deals with the severity of the lines. Mr. Goodhue has been bold and original but has not adopted a feature that smacks of the fantastic or the experimental. What he has done is to take the American skyscraper and with unexampled boldness and courage has fitted it into a pub-

Foyer

This Great Hall leads from the vestibule directly to the central rotunda beneath the tower. Its ceiling is a groined vault of colored and gilt tile of which the apex is 50 ft. from the floor, the room itself being 80 ft. long by 30 ft. wide. On the walls beneath the semi-circular windows of the clerestory are six panels for mural paintings relating to the history of Nebraska. The piers supporting the vault are of marble. This hall is separated from the central rotunda by a screen, providing on the floor above, a convenient means of passage between the Chambers of the House and the Senate

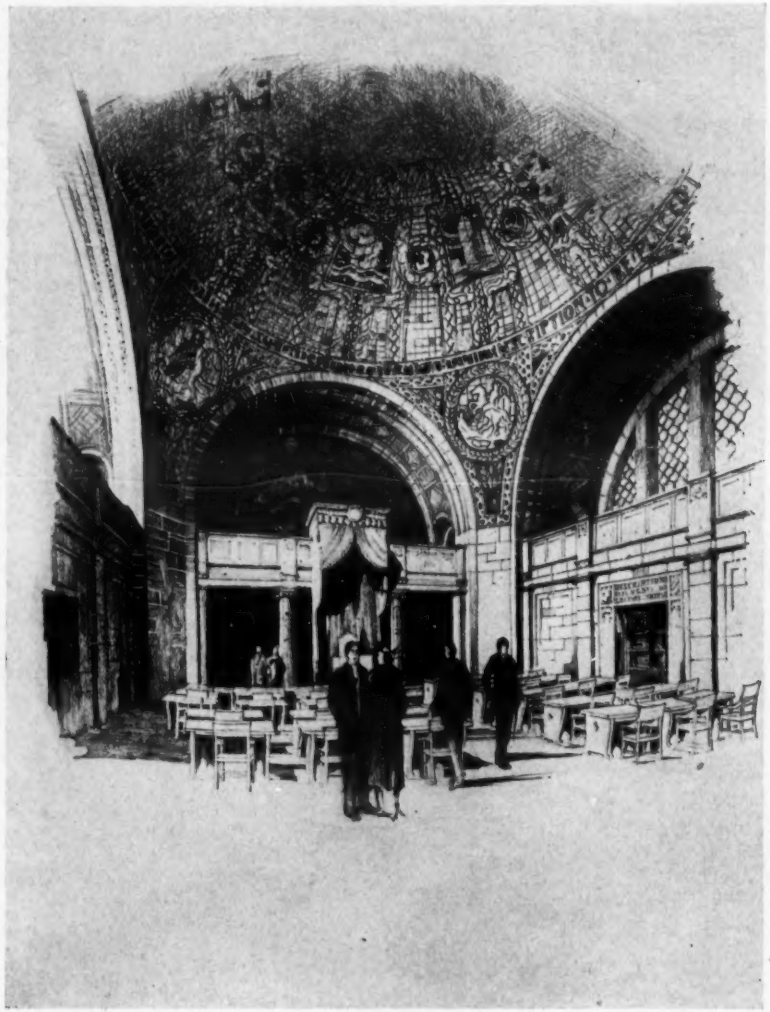
The Library

Though its floor is set a story above, the room balances the Foyer. It is divided by arches into four bays, each bay vaulted with a pendentive dome. Between the projecting bookstacks that carry the balcony are a series of alcoves, each with its own window. The doorway at the end of the picture leads into the reading room which, it is expected, will be used mainly by the judges. Although in this and the reading room, space is provided for sixty thousand volumes, the shaft of the tower will provide for present storage and expansion in the future for many years to come



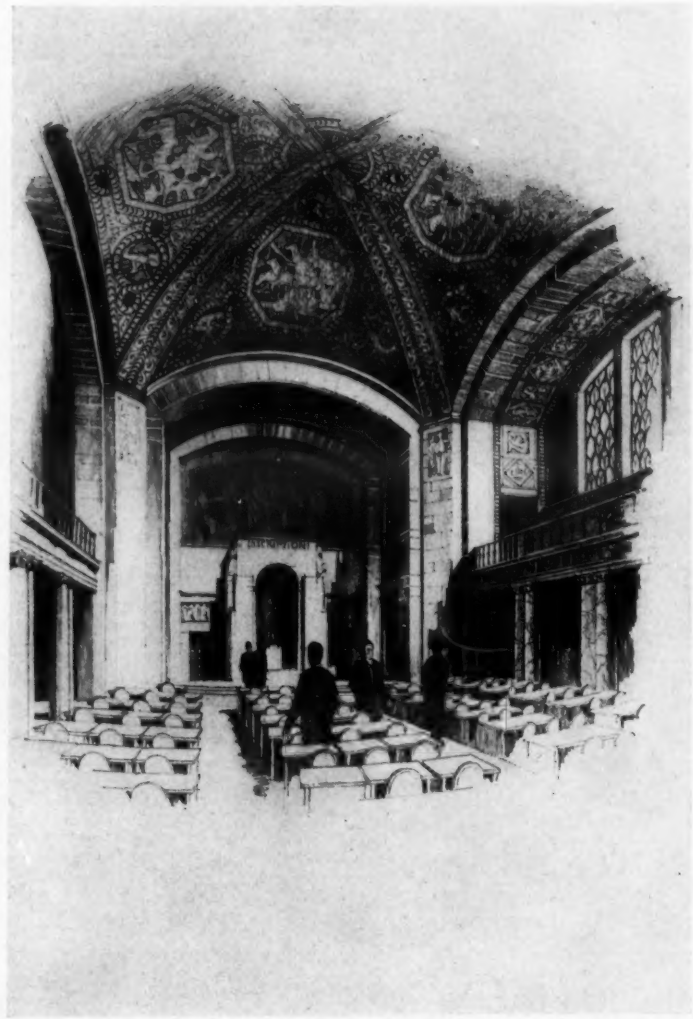
One of the Interior Courtyards and a Corner of the Tower

Each of these courts is a rectangle, 87 ft. x 100 ft. They are open to the sky



Senate Chamber

The walls are of stone, though it is proposed to introduce in panel form and also in the ceiling a different material of high absorbent power for the sake of its acoustic effect. As elsewhere the ceiling, which takes the form of a pendentive dome, is decorated with gold and colored tile. Beneath the galleries that extend around the entire room is a passage separated from the Senate Chamber proper by screens on three sides and with marble columns on fourth, behind the speaker's desk and platform



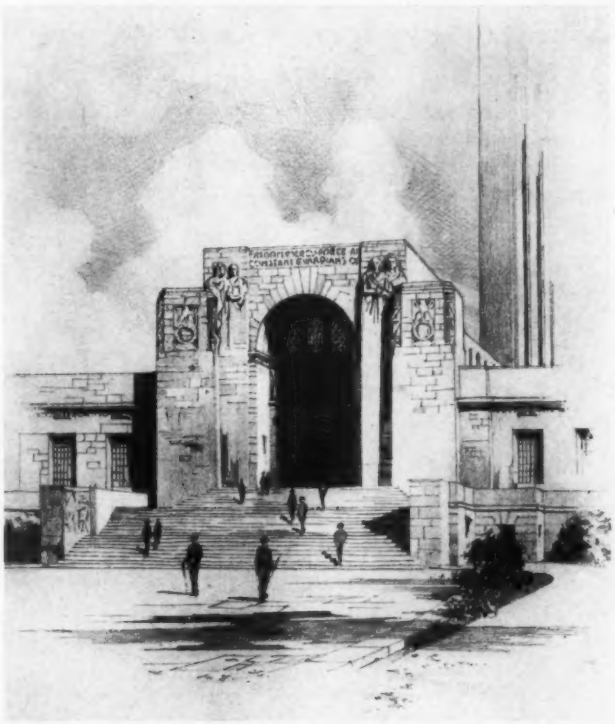
House of Representatives

Though on the plan this Chamber is of precisely the same dimensions as that of the Senate, owing to the necessarily larger seating capacity required, a somewhat different treatment has been used. The galleries, in this case on three sides only, are supported by pairs of marble columns. The Speaker's desk is placed in a niche on the west wall beneath a mural painting, the subject of which has not yet been determined

lic building in a way to give striking architectural results and at the same time provide convenience, utility and economy to an unexampled degree.

The material is to be of stone of a rather light buff tone. No engineering problems of any difficulty have been encountered. Thirty feet below the surface a bed of Dakota sandstone is encountered. Piers at intervals of sixteen feet will be sent down through the clay and sand formation to this rock and no danger of settling need be felt even under the great tower, which is the only portion that puts unusual stresses upon the foundation walls. The tower itself will be of steel construction with wind bracing to give it security.

The building will be enriched by sculpture painting and vaulting of colored and gilt tile. The figures over the main entrance, representing Wisdom, Justice, Power and Mercy have already been modeled by Lee Lawrie, to whose hands has been entrusted all the sculpture for the completed building. Inscriptions drawn from the great storehouse of the world's wisdom will be carved on the walls. Space will be left for mural paintings but these will not be included in the present work of the commission. The law calls for the erection of the building for five millions of dollars without furnishing or without the purchase of additional ground. The new capitol is to stand on the site of the old one. It will be the third state house to be erected on the grounds since Lincoln was made the capitol when the state entered the union in 1867.



Main Entrance

Leading up from 15th Street to the entrance is a monumental flight of steps, 75 ft. wide, terminated by plinths upon which sculptured in low relief, are buffaloes and appropriate inscriptions

THE SESQUI-CENTENNIAL EXPOSITION IN PHILADELPHIA

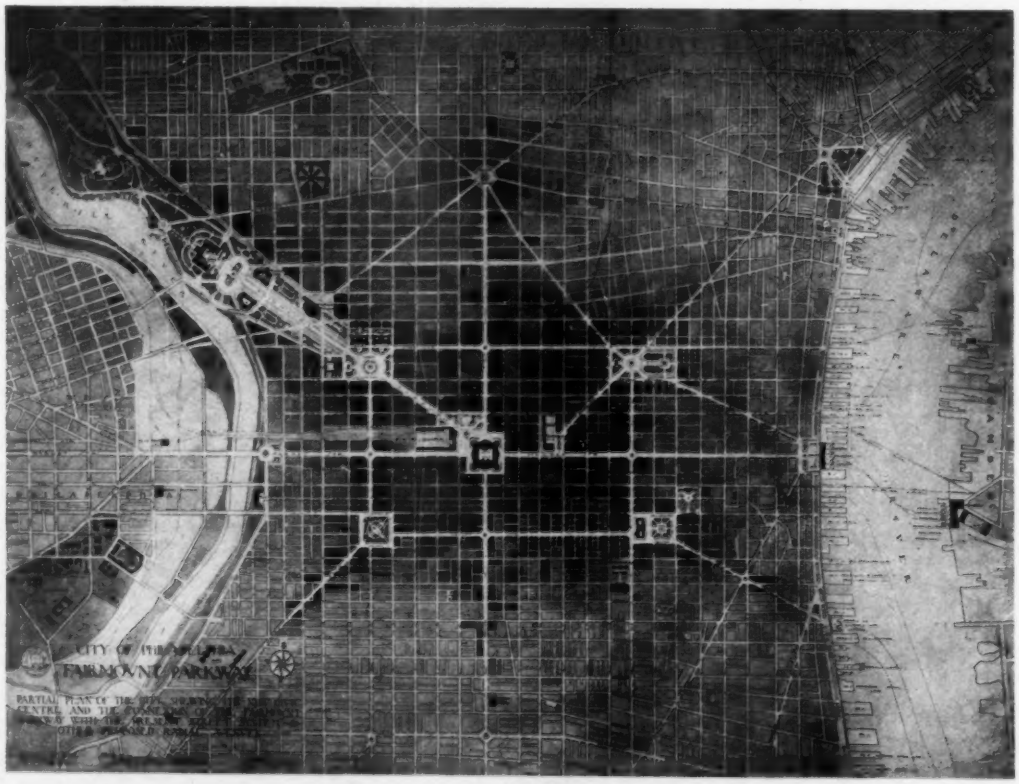
BY CARL A. ZIEGLER, A. I. A.

NOW that Philadelphia has definitely decided upon a site for the Sesqui-Centennial Exposition to be held in that city during the year 1926, to commemorate the 150th anniversary of the signing of the Declaration of Independence, the question naturally arises as to what form that great project is to take.

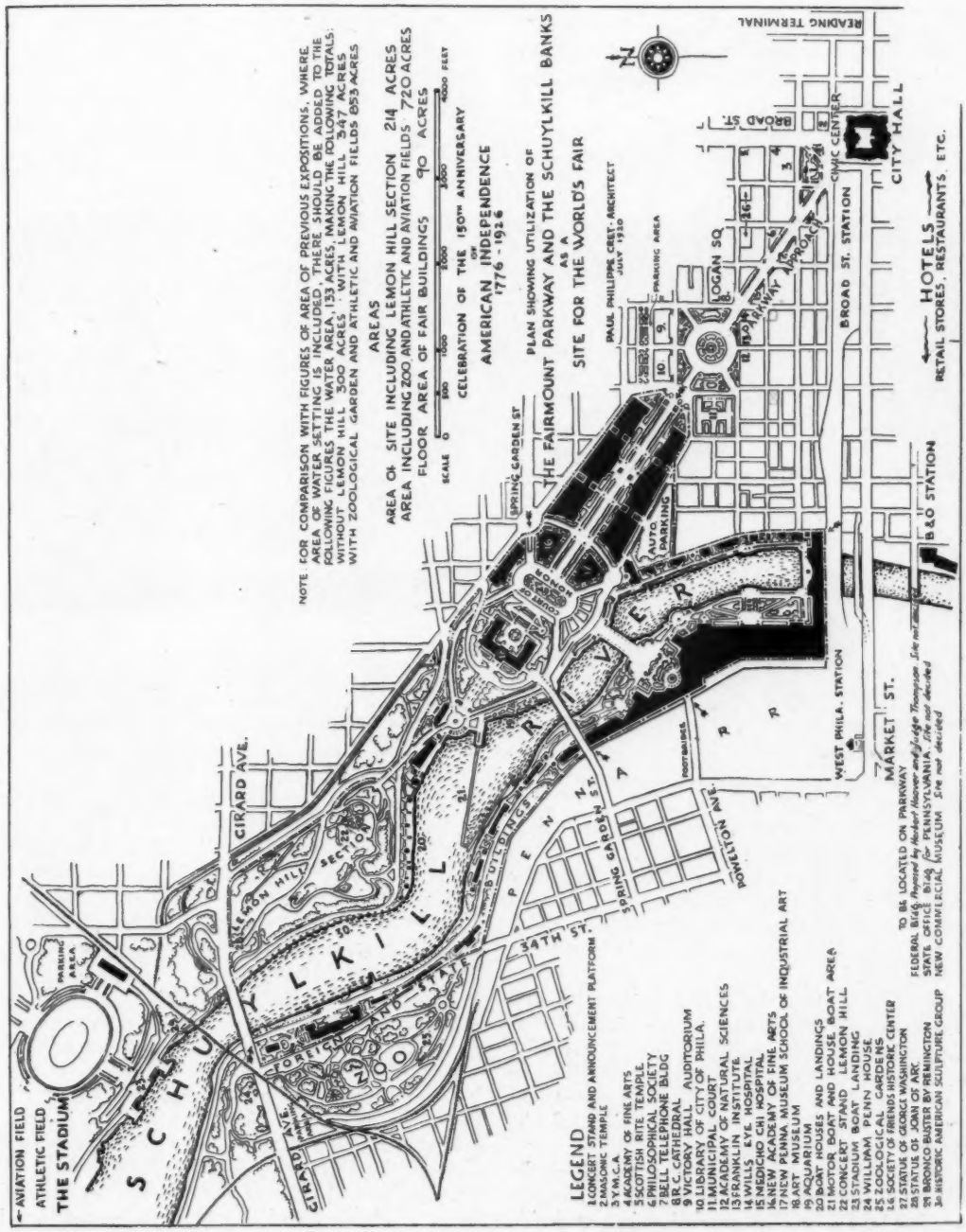
Artists who have followed for the past ten years the development of the great Parkway which cuts diagonally across the city from the City Hall in the center of the business district, to Fairmount Park in the Northwest, realize that Philadelphia has had for some years a vision of creating what is destined to become the Acropolis of Art in America. In addition to this great boulevard, second to none in the world for the boldness and beauty of its conception, Philadelphia has also been studying for a number of years the possibilities of developing the banks of the Schuylkill River along the lines of the Thames Embankment in London and the Seine in Paris.

The eminent French architect, Dr. Paul P. Cret, under whose guidance the School of Architecture at the University of Pennsylvania has been developed until it ranks second only to the Ecole des Beaux Arts of Paris, was retained some years ago to study the development of the Schuylkill River banks where it passes through the city and when the subject of the Sesqui-Centennial was first broached in 1918, he was asked to suggest a plan whereby the Parkway and a portion of the projected Schuylkill Embankment might be used as a nucleus around which to build the coming Exposition.

By the happy association of these two great projects it was hoped to gain for the Exposition an incentive that would not only add greatly to the artistic conception of the Fair, but would also give



Partial Plan of City of Philadelphia, Showing Its New Civic Center and the Connections of the Fairmount Parkway with the Present Street System and Other Proposed Radial Avenues

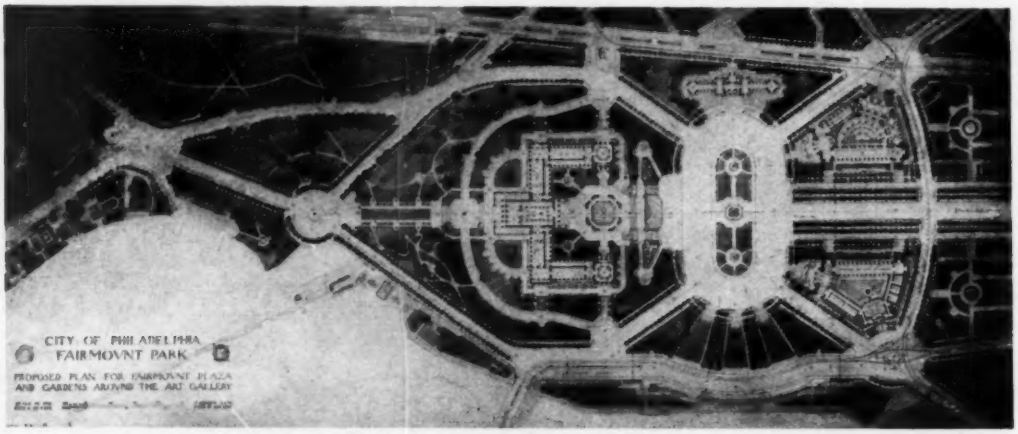

AVIATION FIELD
ATHLETIC FIELD
THE STADIUM
PARKING AREA
SCHUYLKILL RIVER
CIRCLE OF LIGHTS
CIRARD AVE.
LEMON HILL
SECTION
ORTH STATE AND ZOO
34TH ST.
SPRING GARDEN ST.
POWELTON AVE.
PENNSYLVANIA R.R.
FOOTBRIDGE
WEST PHILA. STATION
MARKET ST.
B & O STATION
BROAD ST. STATION
CITY HALL
CIVIC CENTER
READING TERMINAL
BROAD ST.
LOGAN SQ.
PARKWAY APPROACH
PARKING AREA
AUTO PARKING
BOND BRIDGE
PAUL PHILIPPE CRET-ARCHITECT JULY 1920
HOTELS
RETAIL STORES, RESTAURANTS ETC.
NOTE: FOR COMPARISON WITH FIGURES OF AREA OF PREVIOUS EXPOSITIONS, WHERE AREA OF WATER SETTING IS INCLUDED, THERE SHOULD BE ADDED TO THE FOLLOWING FIGURES THE WATER AREA, 133 ACRES, MAKING THE FOLLOWING TOTALS: WITHOUT LEMON HILL 300 ACRES, WITH LEMON HILL 347 ACRES WITH ZOOLOGICAL GARDEN AND ATHLETIC AND AVIATION FIELDS 693 ACRES
AREAS
AREA OF SITE INCLUDING LEMON HILL SECTION 214 ACRES
AREA INCLUDING ZOO AND ATHLETIC AND AVIATION FIELDS 720 ACRES
FLOOR AREA OF FAIR BUILDINGS 90 ACRES
SCALE 0 1000 2000 3000 4000 FEET
CELEBRATION OF THE 150TH ANNIVERSARY OF AMERICAN INDEPENDENCE 1776 - 1926
PLAN SHOWING UTILIZATION OF THE FAIRMOUNT PARKWAY AND THE SCHUYLKILL BANKS AS A SITE FOR THE WORLD'S FAIR
LEGEND
1 CONCERT STAND AND ANNOUNCEMENT PLATFORM
2 MASONIC TEMPLE
3 Y.M.C.A.
4 ACADEMY OF FINE ARTS
5 SCOTTISH RITE TEMPLE
6 PHILOSOPHICAL SOCIETY
7 BELL TELEPHONE BLDG
8 R.C. CATHEDRAL
9 VICTORY HALL AUDITORIUM
10 LIBRARY OF CITY OF PHILA.
11 MUNICIPAL COURT
12 ACADEMY OF NATURAL SCIENCES
13 FRANKLIN INSTITUTE
14 WILLS EYE HOSPITAL
15 MEDICHO CHI HOSPITAL
16 NEW ACADEMY OF FINE ARTS
17 NEW PENNA MUSEUM SCHOOL OF INDUSTRIAL ART
18 ART MUSEUM
19 AQUARIUM
20 BOAT HOUSES AND LANDINGS
21 MOTOR BOAT HOUSE AND BOAT AREA
22 CONCERT STAND LEMON HILL
23 STADIUM BOAT LANDING
24 WILLIAM PENN HOUSE
25 ZOOLOGICAL GARDENS
26 SOCIETY OF FRIENDS HISTORIC CENTER
27 STATUE OF GEORGE WASHINGTON
28 STATUE OF JOAN OF ARC
29 BRONCO BUSTER BY REMINGTON
30 HISTORIC AMERICAN SCULPTURE GROUP
TO BE LOCATED ON PARKWAY
FEDERAL BLDG. Proposed by Herbert Hoover and Judge Thompson. Site not decided
STATE OFFICE BLDG. for PENNSYLVANIA. Site not decided
NEW COMMERCIAL MUSEUM Site not decided

Paul Philippe Cret, Architect

to Philadelphia an inspiration to rush to completion the long cherished Parkway and the River Embankment.

How well Dr. Cret succeeded in combining these three projects can be seen by studying the accompanying plan, which although only a preliminary study and not sufficiently developed to show individual buildings, is worked out in ample detail to afford a comprehensive idea of the great possibilities of the site.

Such a site, the entrance to which is only a few squares from the heart of the City and the Railroad Terminals, is unique and with a river of the width of the Schuylkill to play with, the artists who plan its embellishments must needs be supermen to produce architectural structures worthy of the setting.



Proposed Plan for Fairmount Plaza and Gardens Around the Art Gallery

Strange as it may seem Philadelphia has taken more than a year to decide upon this site, but so keen has been the interest in the Fair that every large public organization has asked to be heard and many sites have been offered for consideration, but that a wise choice was finally made is now the unanimous opinion.

The area, including the Zoological Garden and the water area, is 853 acres. It is estimated that the Fair will cost between Thirty and Forty Millions of Dollars, but unlike most expositions, a large portion of the work will become permanent and will be utilized in the completion of the Parkway and River Embankment.

At the Southwest corner of the tract, along the West bank of the river there now exists an abattoir surrounded by a plot of ground that is a veritable "no man's land" and which must have been overlooked by the early city planners. According to Dr. Cret's plan this wilderness will "blossom like the rose" and as a new bridge is to be built to carry the buildings entirely across the river at this point in order to screen the very unpicturesque bridges directly to the South, we may expect this unattractive spot to become one of the particularly attractive portions of the Fair.

Philadelphia is to be congratulated upon having made a wise choice; that which was done in Independence Hall in 1776 has led many pilgrims to her shrine; that which she will consummate in 1926 is, in term of city planning, quite as radical a step and will no doubt become as famous in the Art World as is the "Cradle of American Liberty" in the Political World, for no city in America has dared to wipe out such a large area from the very center of her business section in order to follow deliberately through many years a vision worthy of the Golden Age.

Only a physical examination of the great Parkway already opened for traffic can give an adequate conception of what has been achieved and now that there has been added to this achievement the determination to complete the Schuylkill River Embankment and the Exposition, the art student may confidently anticipate the dawning of a new epoch in American Art in 1926.

The chief characteristics of the design for the architectural treatment of the Parkway have already been decided upon and the splendid Art Museum at Fairmount with the Court of Honor below it may properly be referred to as "America's Acropolis of Art." Already the Art World is asking pertinent questions in reference to the design of the Exposition itself. Will it follow the purely classical lines of the World's Fair at Chicago, a selection which exerted a tremendous influence on American Art, or should we have the freedom granted the designers of the Paris Fair? Will it be colorful like the Pan-American Fair at Buffalo and are we to have conceptions like Louis Mullgardt's at San Francisco? Will the *"Arts*

Noveau" run riot in the Midway or will the Volstead Act restrain that feature?

A London critic reviewing the recent American Architectural Exhibition in that City stated that only one of the buildings was "American" in design and that the Blenheim Hotel at Atlantic City. What a pity that Mr. Magonigle's War Memorial for Kansas City was not a part of that exhibition, in order to illustrate that the American architect is capable of wandering beyond the limits of stylistic traditions without losing dignity.

No one should quarrel with the desire of the super-modernist to effervesce in the Midway Pleasance, for is not frivolity the essence of the side show, but if a World's Exposition has one purpose that is paramount, it is the creation of a vision that is irresistible and must influence the minds of all who come in contact with it regardless of whether they are classed as the "Intellegenzia" or the "Proletariate."

Only this achievement can possibly justify such a large expenditure of effort and money. Commercial success will not compensate for the lack of vision. The Merchant Princes of Venice have long since been forgotten, but Venice still charms the world.

There is a peculiar psychology about the effect which materials have on the minds of the architectural designer, designing a cornice in galvanized iron as compared with marble for instance.

Most World Fairs are executed in "staff" destined when the last strains of the music have faded and the lights have been extinguished for the last time, to the limbo of forgotten things; but in Philadelphia it is the purpose to salvage a large part of the Exposition for a permanent improvement to the city and this fact must influence the imagination of the designers, else might we find the fair Quaker City permanently arrayed in the ornaments of the frivolous "Flapper."

But four years remain in which to complete the entire project, a time all too short for so stupendous a program and wise must be the executives who are to guide its fortunes if the Exposition is to be a worthy tribute to the arts and crafts of America.

Perspective of the Main Entrance Steps to the Museum

Paul Philippe Cret, Architect

XUM

VIEW INTO PATIO

HOUSE OF E. M. GOULD, ESQ., MONTECITO, CAL.

REGINALD D. JOHNSON, ARCHITECT

ENTRANCE GATES

HOUSE OF W. S. MORSE, ESQ., PASADENA, CAL.

·EDITORIAL·COMMENT·

THE MAY 24 ISSUE of The American Architect will be one of unusual interest and large technical value.

The leading article, by Lionel Moses, entitled "McKim, Mead & White—A History" will review the work in architecture of the present generation of members of a firm that is one of the architectural landmarks of the United States. This article will be profusely illustrated by examples of the larger work of McKim, Mead & White, designed and executed since 1910.

A further important feature of the May 24 issue will be the beginnings of two series:—

The first, by Professor Paul E. Sabine, will treat on the Nature and Reduction of Office Noises. Professor Sabine is probably the highest authority in this country on the subject of acoustics. His article describes and analyzes all the many distracting sounds that are to be found in large offices, due to typewriter operation as well as other mechanical devices used. The remedies are set forth and clearly explained.

The series by Joseph G. Reynolds, Jr., Master Craftsman in stained and painted glass, begun in this issue will take up and consider the technical study of stained glass in all its artistic and commercial phases.

* * *

AN INNOVATION IN EXHIBITS of art was proposed by The National Sculpture Society when it stated its willingness to hold its annual exhibition in the open in the form of a sculpture garden in Central Park, in this city.

In view of the very large educational value of an important exhibition of the art of sculpture under such very dignified auspices, it is difficult to understand the objections raised by various societies. Protests have been made by the Parks and Playground Association, the New York Chapter of The American Society of Landscape Architects and other societies ostensibly interested in the preservation of the parks.

It is gratifying to note that The Architectural League of New York warmly endorsed this out-of-doors exhibition of sculpture, and that it has in a series of resolutions formally expressed its regrets that the objecting societies were not able to consider with more favor the request of The National Sculpture Society. The resolution passed by the League further expresses in its wording, the opinion that the proposed exhibition would lead to the establishment of a permanent sculpture garden to be maintained by the Metropolitan Museum. It cites as precedent characteristics of the appreciation of art by state and municipal authorities abroad, tending towards the embellishment of parks and the education of the public's tastes, the many sculpture gardens maintained in connection with the prominent museums of Europe.

The American Architect is on record as to its attitude towards any encroachment on our present park areas for purposes other than might strictly be regarded as within the usual recreative function of parks. It would seem to be just as logical for the societies who are protesting this exhibition, to protest any extension of building of the Metropolitan Museum as to take exception to an exhibition which would be so very dignified, so very educational and so very desirable towards the art education of the people as is the Metropolitan Museum itself.

In previous years amongst the most dignified exhibitions of art that were held in this country have been those of The National Sculpture Society. Its membership numbers the leading sculptors of the United States, whose work stands far away at the head of the art of sculpture of the world. These exhibitions held more often in connection with the exhibitions of The National Academy or The Architectural League, have not, by reason of the limitation of area available, been able to present the wonderful development of the sculptor's art in America in a manner that is due it.

Further, the rather aristocratic surroundings of the various exhibitions of art held in this country by art societies have a tendency to repel the great mass of the people who are the ones that should really have opportunities for art education. An exhibition of sculpture in the open in Central Park would attract hundreds of thousands of visitors and would do more to acquaint the people with the wonderful artistic development of sculpture in the United States than any exhibition that might be held indoors.

The protesting societies should re-consider this matter in all its various aspects. If the best counsels are brought to bear and the exhibition encouraged as it should be, The National Sculpture Society would undoubtedly place on exhibition in Central Park a collection of sculpture that would mark an epoch in the art history of this country.

* * *

SINCE THE FOREGOING was written, The National Sculpture Society has withdrawn its application for the proposed space for an exhibition in Central Park. A. A. Weinman, the

REGINALD D. JOHNSON, ARCHITECT

XUM

chairman of the exhibition committee, stated in his letter to Park Commissioner Gallatin that in view of the objections that had been raised the Society had decided to abandon the project. Commissioner Gallatin in his reply, indicated that he would consider the advisability of a plan whereby the City would acquire property for a formal garden where public art exhibitions could be given.

If the proposed exhibition could have been held, Mr. Gallatin would have little, if any, difficulty in securing official sanction to the plan he proposes.

No feature of art in this country is as little understood by the masses as that of sculpture. We hope The National Sculpture Society will not abandon an out-of-doors exhibition. It could, and undoubtedly would, prepare a grouping of sculpture that would delight and instruct thousands of people. An opportunity to forward one of the most dignified educational undertakings is undoubtedly only lacking of official co-operation. There are other available sites. The National Sculpture Society could, if properly encouraged, arrange an exhibition on some selected section of Riverside Drive that would become a Mecca to all the people. Perhaps art has as much right there as railroad tracks, coal pockets and flaunting bill boards.

* * *

CENTRAL PARK HAS NOW LOST most of its one-time natural charm. The impoverishment of the soil has retarded growth of forest trees, and the vandal elements in a city population have over-run and destroyed much of the natural effect of that fine area.

It is, of course, perfectly right to preserve the park from encroachment, but it seems inconsistent to permit the slow destruction that is the result of a careless, thoughtless lot of people. Eventually, owing to a shifting of population, Central Park will be too far from the classes of people who most need to avail of it. Even now it is surrounded on all sides by the most stately residences and high rental apartments in this city. During summer months most of these dwellings are closed and those who avail of the park come long distances from the congested locations of the East Side.

A group of citizens, headed by George Grey Barnard, the sculptor, has suggested that the large and undeveloped section along the southern banks of Spuyten Duyvil Creek, and running from 189th to 203rd Streets, be saved from so-called improvement and be converted into an acropolis and recreation area. Few cities possess so attractive a locality. Since the days when Hendrik Hudson voyaged on the river which bears his name, this spot has remained untouched. Few of the dwellers on Manhattan Island know of its beauty. Those who do, find recreation and rest on those wooded slopes under the shade of trees of forest growth. Efforts have been made to save this tract from the hands of the real estate speculator, and an option was secured on its purchase. But it seems impossible to impress the city authorities with a sense of the importance of this tract or to find citizens of sufficient public spirit to contribute to its purchase.

There, would be provided a place for an out-of-doors exhibition of sculpture, with an unsurpassed setting. If one could be arranged, the hundreds of thousands who would visit it would become so impressed with the absolute necessity for the conservation of this wonderful site that it would be a hardened politician or a more than indifferent "realtor" who would set his sordid views against the will of the citizens.

Here is a park site, exactly on Manhattan Island on a location that would not be surpassed by any city in this country.

The National Sculpture Society, with the strong backing it undoubtedly could secure, could start a movement that would earn it the gratitude of every one in Greater New York.

* * *

C. B. J. SNYDER, for thirty-one years Superintendent of School Buildings in New York City, has applied for retirement. Dr. Ettinger, Superintendent of Schools, in announcing Mr. Snyder's application for retirement, referred at length to his long and faithful services and his great contribution to the advancement of school architecture in the United States. "Many features," said Dr. Ettinger, "that are now considered essentials of school building planning were originated by Mr. Snyder, while the artistic excellence of his designs have set standards everywhere."

During his term of office, Mr. Snyder has supervised the erection of more than $200,000,000 worth of school buildings. It is significant of his efficiency and close adherence to the highest principles of architectural practice, that during his incumbency, Mr. Snyder's department has been conspicuously free from all political scandal.

It is sure that every one that has at one time or another been in contact with Mr. Snyder's department will learn with regret of his proposed retirement. He may confidently believe that he has gained the respect of the entire community and that he has set a standard that will for all time be the highest mark of artistic and executive efficiency.

REFLECTION POOL

HOUSE OF J. P. JEFFERSON, ESQ., MONTECITO, CAL.

REGINALD D. JOHNSON, ARCHITECT

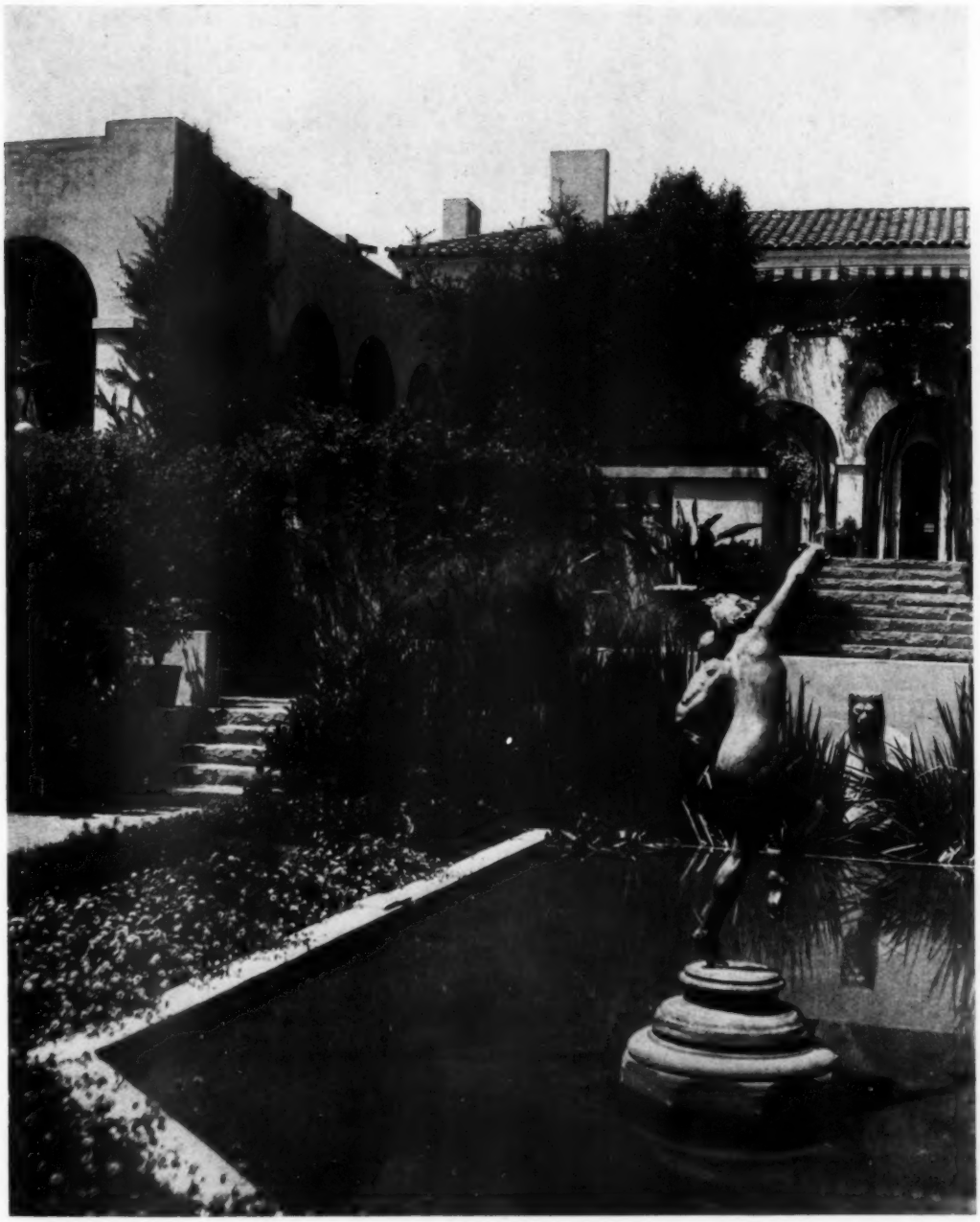
XUM

POOL AND PERGOLA

HOUSE OF J. P. JEFFERSON, ESQ., MONTECITO, CAL.

REGINALD D. JOHNSON, ARCHITECT

XUM



VIEW INTO PATIO WITH BACCHANTE BY McMONNIES

HOUSE OF J. P. JEFFERSON, ESQ., MONTECITO, CAL.

REGINALD D. JOHNSON, ARCHITECT

XUM

FRONT ENTRANCE

HOUSE OF E. C. THIERS, ESQ., PASADENA, CAL.

REGINALD D. JOHNSON, ARCHITECT

XUM

HOUSE OF MRS. F. P. KNOTT, MONTECITO, CAL.

REGINALD D. JOHNSON, ARCHITECT

XUM

CORNER OF FORECOURT

HOUSE OF EDWARD LOWE, ESQ., MONTECITO, CAL.

REGINALD D. JOHNSON, ARCHITECT

HOUSE OF TODD FORD, ESQ., PASADENA, CAL.

REGINALD D. JOHNSON, ARCHITECT

DETAIL OF PRINCIPAL ENTRANCE

HOUSE OF W. S. MORSE, ESQ., PASADENA, CAL.

REGINALD D. JOHNSON, ARCHITECT

XUM

FRONT ENTRANCE

HOUSE OF T. R. COFFIN, ESQ., PASADENA, CAL.

REGINALD D. JOHNSON, ARCHITECT

XUM

VOL. CXXI. NO. 2393

MAY 10, 1922

HOUSE OF E. P. GAVIT, ESQ., MONTECITO, CAL.

REGINALD D. JOHNSON, ARCHITECT

VIEW IN GARDEN

HOUSE OF EDWARD LOWE, ESQ., MONTECITO, CAL.

GARDEN STATUE BY McMONNIES

HOUSE OF J. P. JEFFERSON, ESQ., MONTECITO, CAL.

REGINALD D. JOHNSON, ARCHITECT

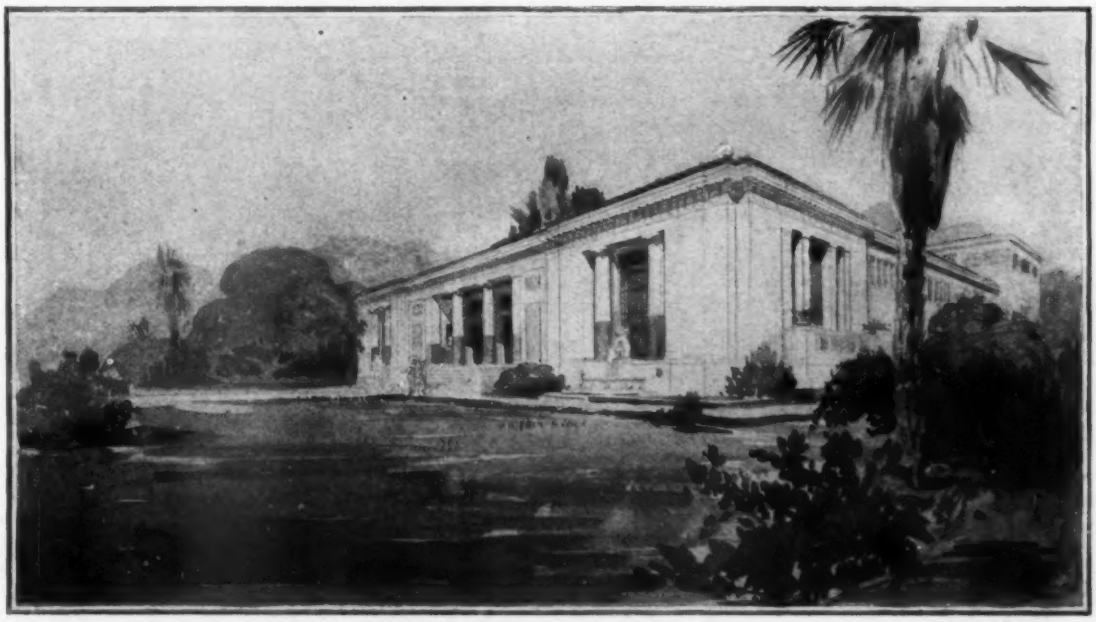
HOUSE OF E. M. GOULD, ESQ., MONTECITO, CAL.

ENTRANCE PORCH

HOUSE OF ARTHUR K. BOURNE, ESQ., PASADENA, CAL.

REGINALD D. JOHNSON, ARCHITECT

XUM



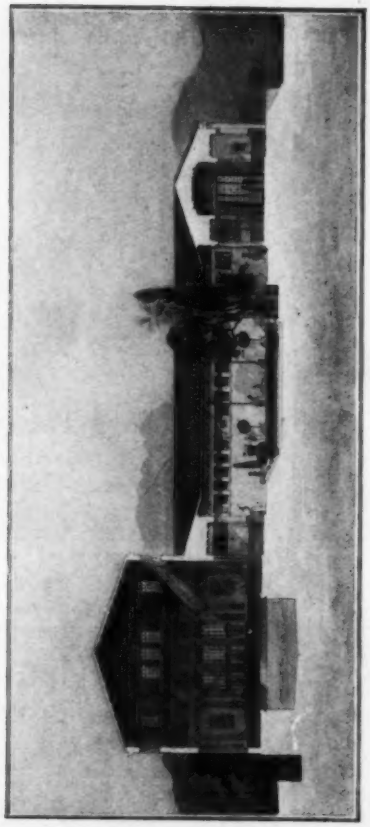
PRIZE WINNING DESIGN

LIONEL H. PRIES

LE BRUN TRAVELING SCHOLARSHIP COMPETITION, 1922

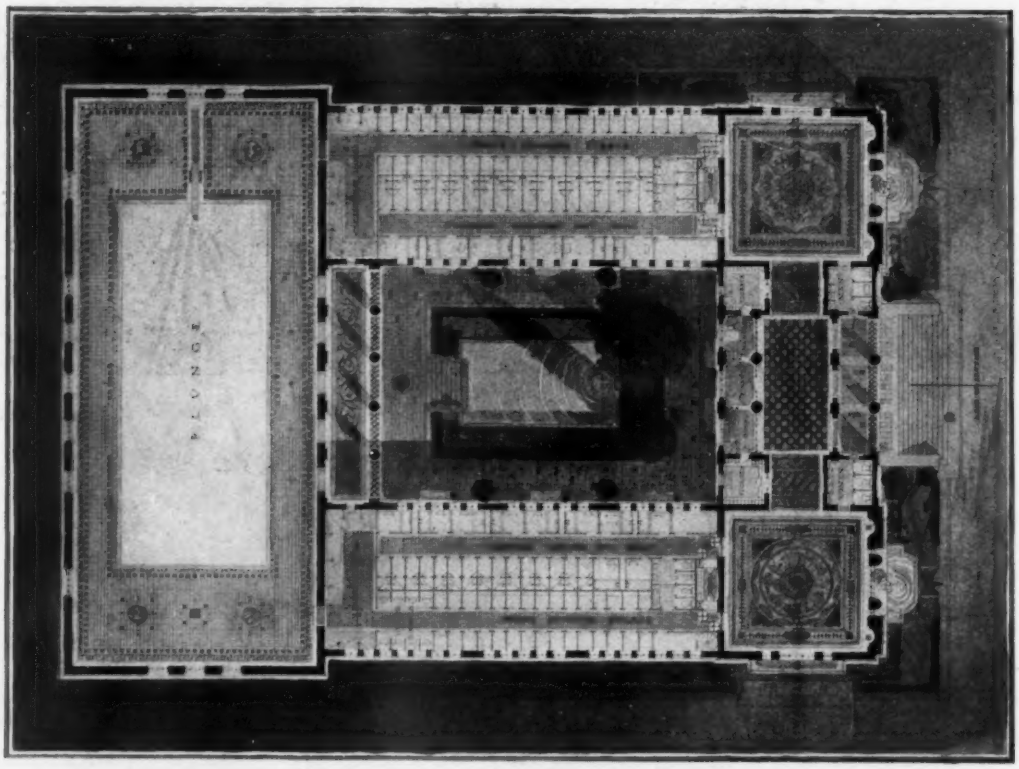
XUM

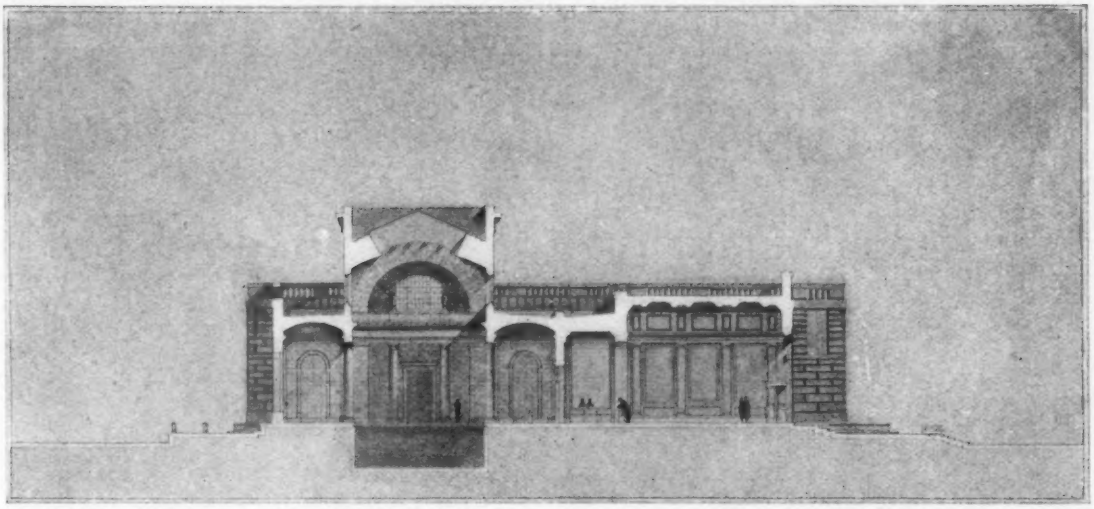
LE BRUN TRAVELING
SCHOLARSHIP COMPETITION, 1922

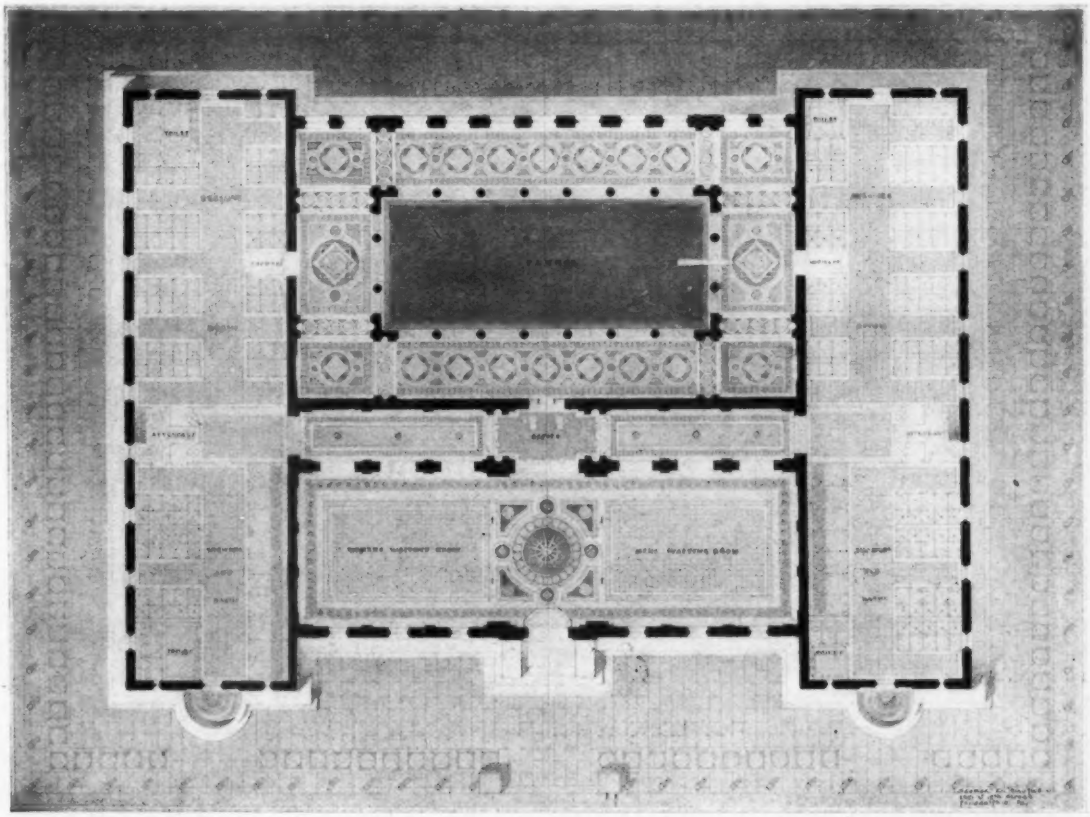


LIONEL H. PRIES

PRIZE WINNING DESIGN





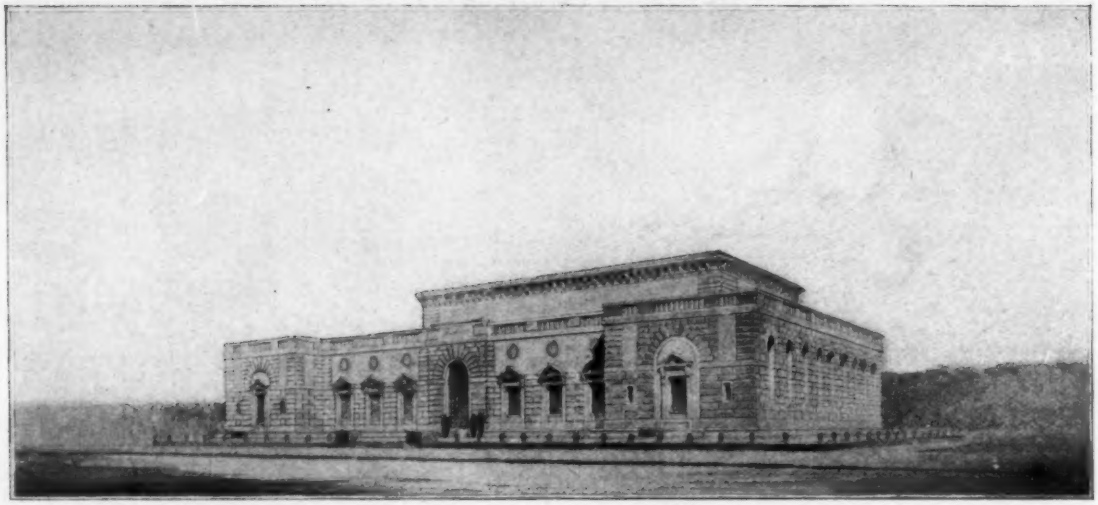


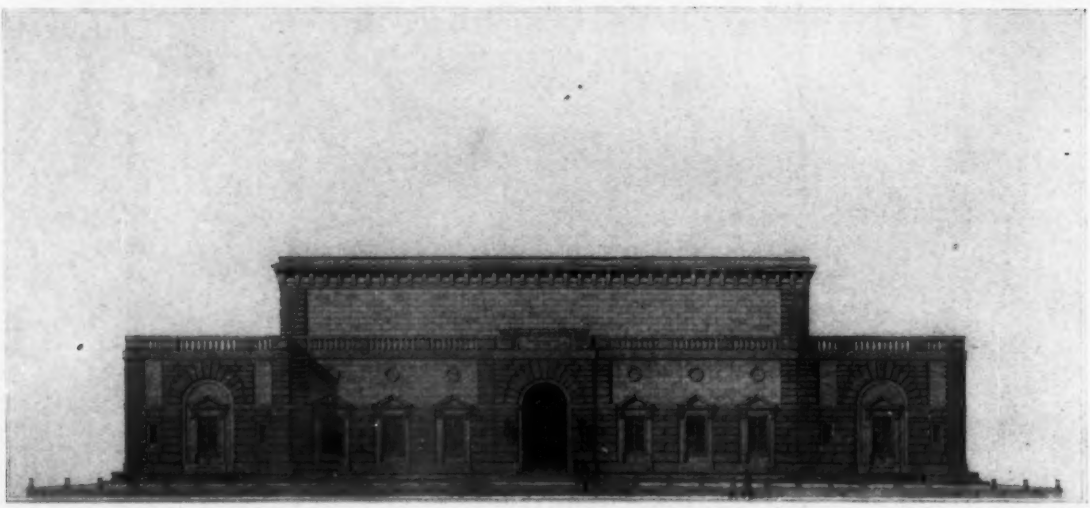
FIRST MENTION

GEORGE K. TRAUTWEIN

LE BRUN TRAVELING SCHOLARSHIP COMPETITION, 1922

XUM

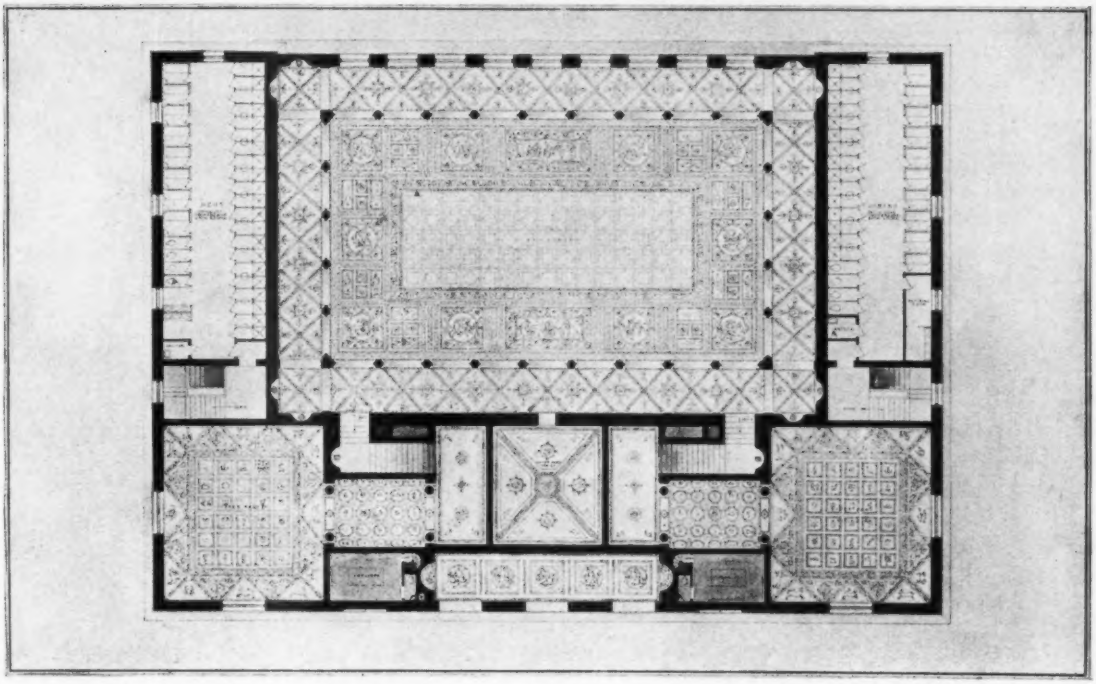


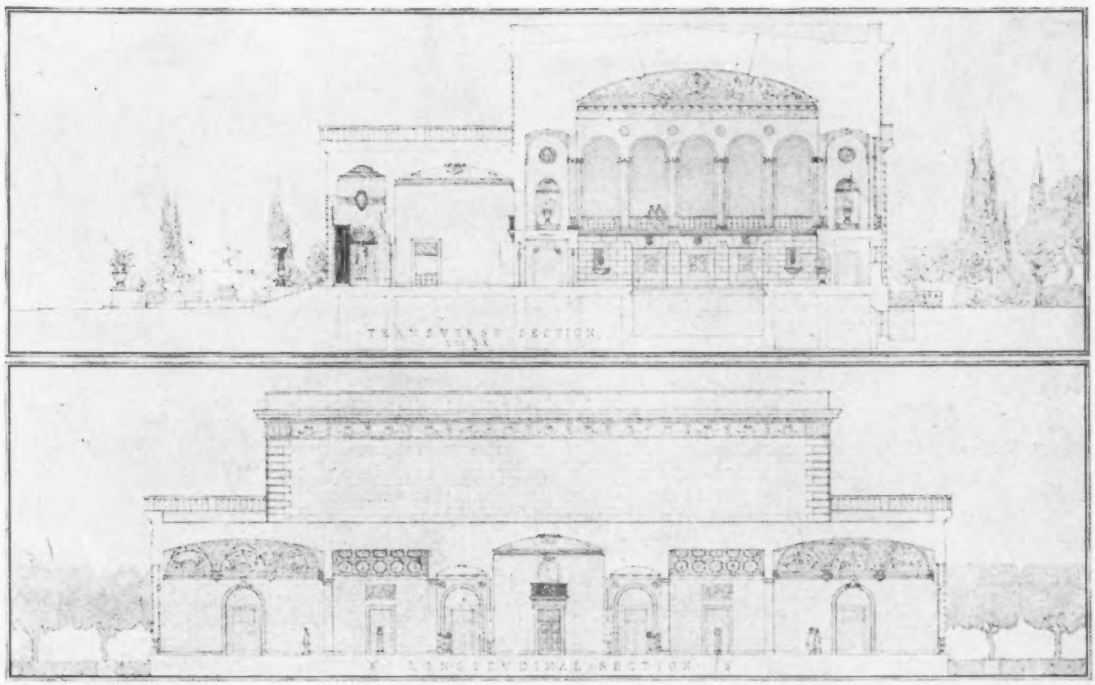


FIRST MENTION

GEORGE K. TRAUTWEIN

LE BRUN TRAVELING SCHOLARSHIP COMPETITION, 1922



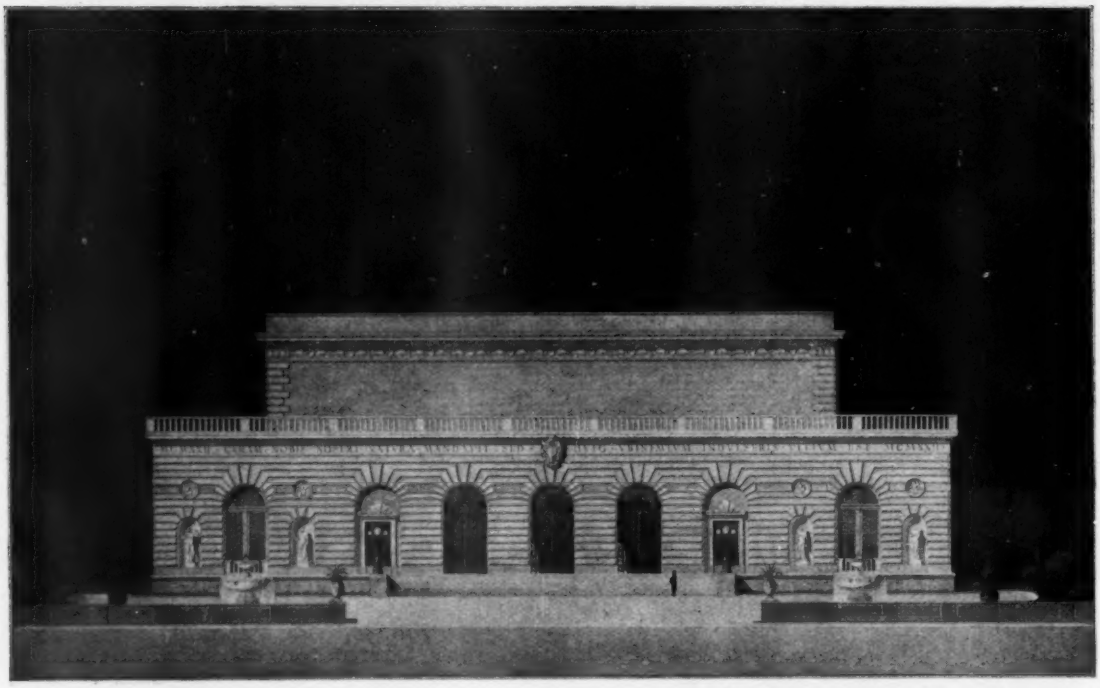


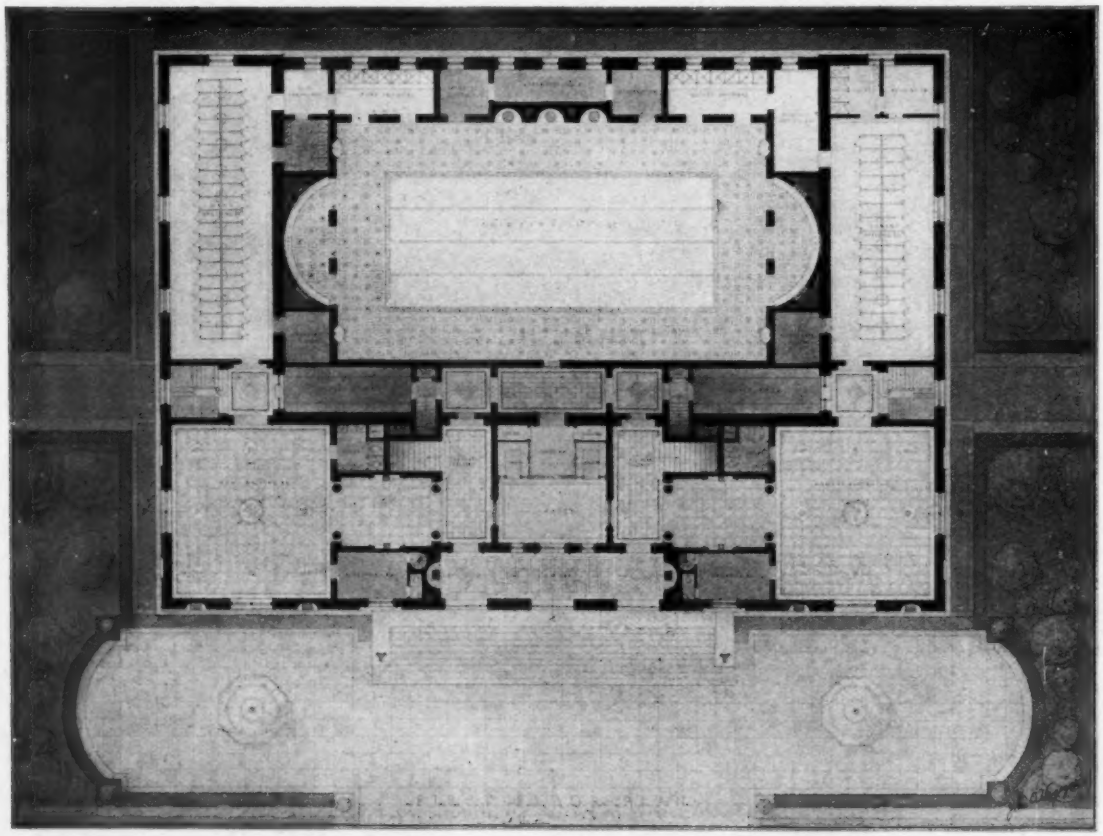
SECOND MENTION

JOHN O. VEGEZZI

LE BRUN TRAVELING SCHOLARSHIP COMPETITION, 1922

XUM

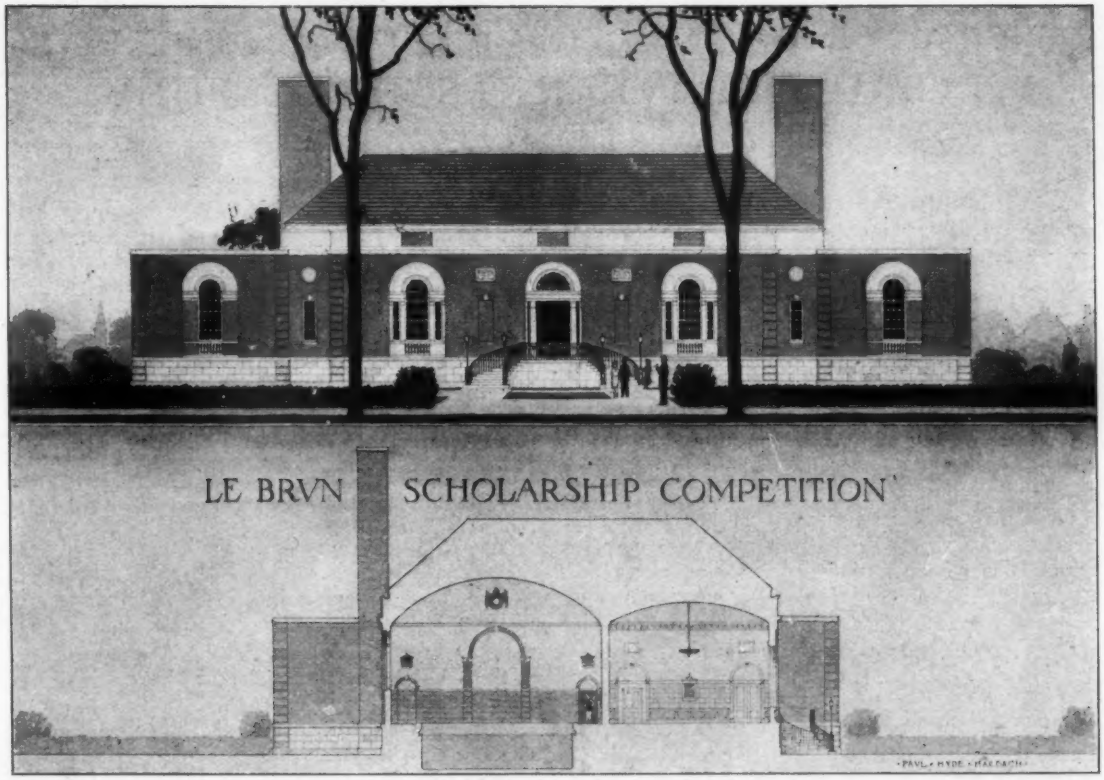


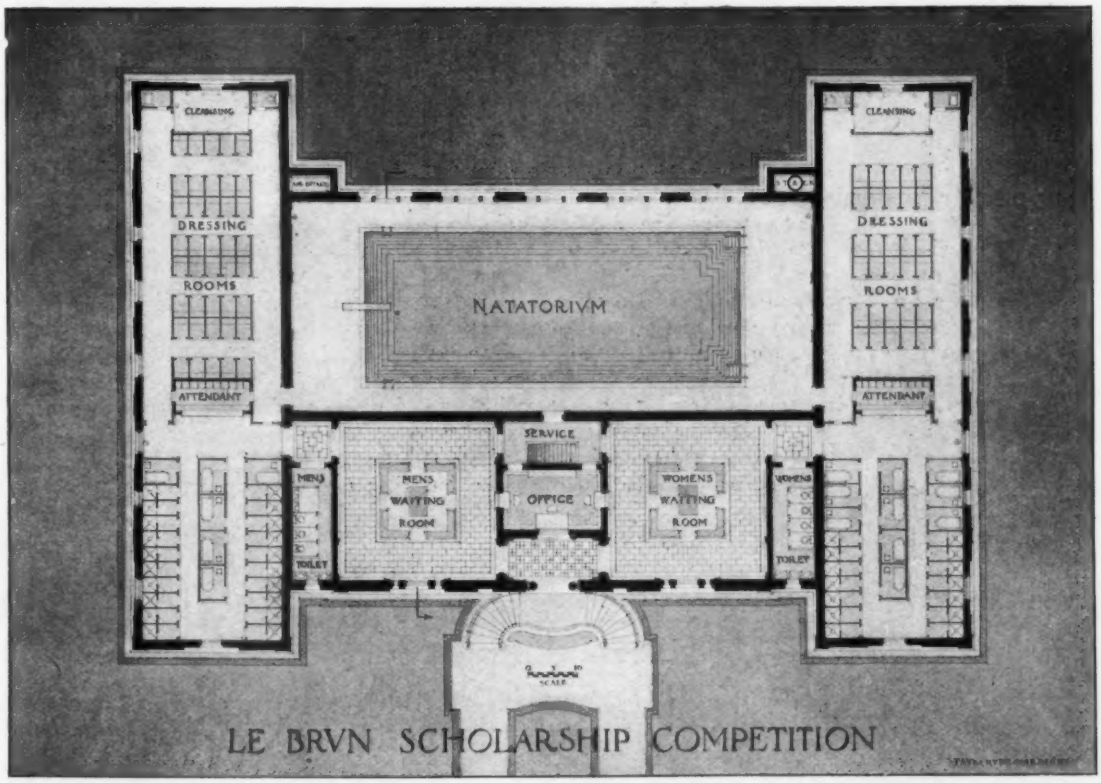


SECOND MENTION

JOHN O. VEGEZZI

LE BRUN TRAVELING SCHOLARSHIP COMPETITION, 1922





THIRD MENTION

PAUL HYDE HARBACH

LE BRUN TRAVELING SCHOLARSHIP COMPETITION, 1922

XUM

EXTRACTS FROM COMPETITION PROGRAM, LEBRUN TRAVELING SCHOLARSHIP, 1921-1922

A PROSPEROUS city of from 100,000 to 150,000 population has voted the funds necessary for the construction of a

MUNICIPAL BATH BUILDING

It is supposed that the citizens of the city have a proper pride in the aesthetic quality of its public buildings, parks, etc., and have consequently instituted a competition for the selection of an architect to construct this building about to be added to the city's public buildings.

The size, materials, type of architecture, etc., are left entirely to each competitor who may locate, if he so wish, the city in some particular region of this country and develop his scheme and selection of materials to suit and express the climatic or other general conditions of the region.

THE SITE: The building is to be located in a public park in proximity to a main street that forms one of the boundaries of the park, and at a point where there is no grade. The building, with its approach, must be confined to a space 190 ft. x 250 ft. It is left to the option of the competitor to determine whether the long or the short axis of the property shall be parallel with the street.

THE BUILDING: Practical considerations call for the entrance, or entrances, for both men and women, to be on the façade, facing the public street, from which they have immediate access to separate waiting rooms.

While in these waiting rooms, both sexes obtain from the General Office a card of admission to the baths and they give up, for safe keeping, any valuables in their possession.

Each sex must have direct access from its waiting room to its portion of the bathing establishment. An attendant there takes up the bath ticket and distributes towels and, when required, bathing suits.

Those who merely wish to take a shower bath will find individual dress cabins in communication with individual showers. Those who wish to take tub baths, will find bath rooms with bath tubs, while those who wish to enjoy a swim in the plunge, will find dress cabins in direct communication with a Cleansing Room, for each sex, where a shower must be taken, before proceeding to the plunge. The plunge is to be used in common by both sexes.

Exit from the building must, of necessity, be through the waiting rooms.

REQUIREMENTS FOR THE BUILDING

A PLUNGE or swimming pool, 75 feet long and about 30 feet wide with a platform on all sides about two feet above water level. At the deep end of the pool the platform should allow for a running dive.

CLEANSING ROOMS, one for each sex, with totals of about 12 showers.

DRESSING CABINS (3 feet x 4 feet). Approximately 40 for men, 30 for women.

SHOWERS (3 feet x 3 feet) with individual dressing cabins (3 feet x 4 feet), 1 shower for each cabin, approximately 20 for men, 15 for women.

BATH ROOMS with individual bath tubs, about 6 for men, about 10 for women.

TOILETS AND WASH STANDS for each sex separately.

ATTENDANT'S ROOMS for towel and other supplies.

WAITING ROOMS for each sex.

GENERAL OFFICE for administration.

The general services for heating, etc., may be considered to be placed in a basement or cellar and do not form part of this program, but their existence necessitates the raising of the main floor level about 5 feet above curb.

The building may be one or more stories in height.

LEGAL DEPARTMENT

Conducted by

CLINTON H. BLAKE, Jr., of the New York Bar

THERE has recently been passed by the New York Legislature, and approved by the Governor, the so-called Bly bill which amends in a number of important particulars the 1915 Law referring to the registration of architects. The old law required in substance that any person residing in or having a place of business in New York State and who, before the law went into effect on April 28, 1915, had not engaged in the practice of architecture in that state under the title of architect, must before being known as an architect, secure a certificate allowing him to practice as such. The law further provided that any person who had been in practice as an architect before the above date "may" secure such certificate and that anyone having a certificate is entitled to be known as a registered architect. Under the above phraseology, it was optional with anyone who had been engaged in the practice of the profession prior to the time when the law took effect to register or not register, as he saw fit. The only difference was that, if he did register, he might then assume the title of "Registered Architect" and use the abbrevation "R. A." as indicative of the fact that a certificate of qualification had been issued to him.

The law in this respect has not been changed. This section of the law has, however, had a new paragraph added, as follows:

"Any person claiming the right to practice as architect or registered architect by reason of his or her having been in practice as such prior to the twenty-eighth day of April, nineteen hundred and fifteen, may be required by the board to file an affidavit setting forth the facts and to present such evidence as will satisfy the board that he or she was in *bona fide* practice previous to such day."

It will be noted that the above paragraph gives the Board the power to require any architect, registered or not, to submit proper proof of the fact that he was engaged in *bona fide* practice prior to the date mentioned.

The section of the old law dealing with the Board of Examiners remains substantially unchanged. The section dealing with qualifications, examinations and fees, is amended in a number of important respects, however. Among other things, an applicant in order to secure his registration without examination must show that he was in practice for two years prior to April 28, 1915, and make application for registration before January 1, 1923.

The section dealing with certificates has been enlarged. There is now provided a fee of $1.00 for the filing of the certificate of registration and the affidavit in the office of the clerk of the county in which the architect resides or has his office. It is further provided that re-registration must be made by May 1, of each year, through the Secretary of the Examining Board, and that a fee of $2.00 is to be charged for each re-registration. It is further provided that an architect who is not registered as shown by the list to be published each January 1, shall be deemed to be practicing illegally and that his certificate may be revoked, and that all architects registered at the date of the passage of the act must, before December 1, next, apply for re-registration through the Secretary of the Board.

The date of the approval by the Governor of this bill was April 5, 1922. Apparently the provisions of the law which make it permissive and not mandatory for an architect in practice prior to April 28, 1915, to register are retained. The new provisions to the effect that an architect who does not appear to be registered, as shown by the list to be published each year, shall be deemed to be practicing illegally, refer merely to those architects who have registered. The effect of the law, therefore, appears to be that if an architect does not register he is entitled to practice without registration by reason of his practice prior to April 28, 1915, and may continue to practice without registering and will not be considered to be practicing illegally because his name does not appear on the registration list. On the other hand, if an architect registers, and thereafter fails to re-register, so that his name fails to appear on any list to be published thereafter, he will thereupon be deemed to be practicing illegally and his certificate will be revoked.

There is some question in my mind whether such an architect might, nevertheless, continue thereafter to practice without registration if he had been in practice prior to April 28, 1915. The provision of the law that he would be deemed to be practicing illegally is certainly broad enough, however, to be construed as covering his practice whether he practiced as a registered architect or not and the indication is that once an architect is registered, he must thereafter be careful to re-register regularly or face the danger of having it held that he is not legally entitled to practice.

The foregoing amendment is in line with the general tendency, which I have had occasion to

XUM

note before in these columns, to place the practice of the profession on a basis more analogous to that of the profession of law by requiring that all applicants, for admission to practice, shall demonstrate their fitness not alone by their preliminary training or by graduation from a recognized School of Architecture, but by their ability to meet the requirements of proper examinations, corresponding to the examinations for admission to the bar. It is a question of time only, I think, when laws of this general type will be adopted generally by the different states and placed upon a substantially uniform basis.

LEGAL DECISIONS

PLAINTIFFS brought an action to foreclose a mechanics' lien. The lien was claimed under a contract between plaintiffs and defendant, whereby the plaintiffs agreed to erect and complete a garage and factory building. The contract called for the furnishing by the architect of certificates at the end of each month. Plaintiffs began work, but never completed the contract. They claimed that the defendant, the owner, had defaulted in making payments under the contract, but the court found that this was not the case, and that the plaintiffs abandoned the contract, without any justification for this action on the part of the owner. Thereafter, the owner took possession of the premises and proceeded with the completion of the building. The plaintiffs claimed that the defendant, in completing the work, did so at an unnecessary expense, and claimed also reimbursement for extra work. The decision of the court is voluminous, and, after practically taking an account between the parties, decides on a certain balance due the plaintiffs for extra work and for the difference between the balance of the contract price and the cost to the owner of completing the work, less a nominal award to the owner on his counterclaim. In the course of its opinion, the court, among other things, held as follows:

If an owner is in default in making payment under a building contract, the contractors are no longer bound to proceed, but are thereby relieved from their obligations under the contract and entitled to file a lien for the amount due them for work and materials.

If the contract provides that payment installments are not due until the certificate of the architect is obtained, nothing is due on such an installment, in a case where the certificate is not produced or its production is not waived by the owner.

Where the owner is given the right to retain an amount sufficient to indemnify him against claims or liens and the contractor admits that the claims or liens against the property exceed the balance due the contractor, the owner is not obligated to pay such balance to the contractor, until he is completely indemnified against such claims or liens. The requirement that the architect's certificate shall be produced to justify payment of an installment is not applicable where the owner completes on the contractor's default. Where the owner so completes, upon abandonment of the contract by the contractors, without just cause, the owner remains liable for the payment of such liens as take precedence over the lien of the contractor, in the order of their priority, provided that, after allowing for the cost of completion, sufficient of the contract price remains to take care of such liens. Where the owner completes on the default of the contractor, it is not proper to attempt to show, by expert testimony, what would be the reasonable cost for the completion of the work or the reasonable cost of completing any part thereof. This evidence is not admissible, because the question is not what the contract could be completed for, but what was actually and necessarily expended to complete the contract. The owner cannot, however, complete the work in an extravagant or reckless manner and charge the contractor for expenses unnecessarily or unreasonably incurred. It is only the reasonable value of the work necessarily done fully to complete the contract, according to the plans and specifications, which is deductable from the contract price.

Where the contract provides that claims for extra work shall be arbitrated, the right to insist on this procedure is waived, where the owner does not raise any such question in his answer and makes no objection to the admission of testimony on the trial offered by the contractor, in support of the claim for extra work. The balance found due the contractor for extra work is applicable to the payment of liens in the order of their priority.

Where a contract provides that there shall be a payment of $15.00 per day, as liquidated damages for the contractor's delay, such a provision is applicable only in a case where the contractor delays in completing the building, as distinguished from the case where the work is abandoned by the contractor and the owner undertakes the completion thereof.

In an action on a building contract, where the amount ultimately found due the contractor was unliquidated, no interest will be allowed on such amount.

Although no sum may be due a building contractor on his contract when his lien is filed, the lien nevertheless attaches and is effective, to the extent of any sum subsequently becoming due thereunder.

Clark v. Fleischmann Vehicle Co., Inc., 187 N. Y. Supp. 807.

DEPARTMENT OF SPECIFICATIONS

CONCRETE SPECIFICATIONS—(*Continued*)

THE last article in this department discussed the erection of forms, the placing of reinforcing steel and the mixing of concrete.

It has been suggested heretofore (somewhat out of proper sequence) that the forms should be wetted in warm weather before the placing of concrete. This is mentioned again to bring it into proper sequence as the specifications should mention this procedure after the specifications covering the mixing of the concrete.

One other item deserves attention before proceeding with specifications for depositing operations. That is the heating of concrete ingredients during freezing weather. Although it may appear that construction operations will be carried to completion during warm weather one rarely can be sure that some unforeseen delay will not force some, if not all, of the concrete work into cold months. On the other hand, it would not be proper to include clauses covering heating of materials in work in our southern climate where the likelihood of freezing weather is rare if not totally absent. The frequently mentioned good judgment of the specification writer must be exercised here also as he should not be put in the class of one person who at one time called for trap rock for concrete coarse aggregates for work in a locality where no trap rock was available but where equally good broken stone of another geological character was in common use.

Concrete must be placed in the forms immediately after being mixed and deposited in such a manner that the ingredients will not become separated. One objection to the dropping of concrete from a height, aside from the possible separation of ingredients, is that air may be retained, forming pockets that may not be eliminated later. If such pockets occur along the forms they will be visible and may then be patched. But a number of such pockets may form a train of voids that will facilitate the penetration of ground water or free water if present and thus introduce hazards that should be carefully avoided. It is not probable that sufficient air pockets would be formed to introduce the factor of failure but, nevertheless, careless work of this nature should be prohibited.

The concrete should not be placed in piles to be spread through the forms later, but should be distributed evenly along the spaces from end to end, so that levels may be kept fairly uniform. Immediately after the placing of concrete it should be agitated and rammed with suitable tools to release entrained air and, where circumstances require, to produce smooth surface finishes. The choice of suitable tools should be left to the discretion of the architect's superintendent and the contractor except in the case of surface finishes, in which case a long, thin bladed tool may be required.

If coarse surfaces are desired it may be that the desired effect can be obtained by placing concrete of a dry mix, composed of aggregates of a small, uniform size along the side of the form, to be backed up with the general concrete. For decorative concrete surfaces, where coarse textures are desired the method of depositing the concrete must be given special attention, to insure sufficient control of the work. For reinforced walls the concrete must be rodded to insure complete surrounding of reinforcing and for thin walls or walls that are heavily reinforced the forms may be pounded to produce the proper degree of compactness.

In agitating the concrete to produce material of maximum density (and that is the prime purpose of agitation) the specifications should require that agitation cease when a distinct film of water begins to form on the upper surface of the concrete. If concrete is to be placed on top of it at once, the presence of this film may not be fraught with much danger but if there is a chance that a work plane will be formed this film is what produces laitance. Work planes are always difficult to handle in any way but the one correct way, except where the surrounding soil is permanently perfectly dry and, consequently, there is no danger of water seepage.

The best practice requires that when work of placing concrete in wall forms ceases at the end of the day, a key be formed longitudinally by a two by four inch scantling or a stick of timber of other suitable size and so shaped that it may be removed easily when the next day's work commences. Where reinforcing occurs it may be difficult to place a scantling flatwise, in which case, if it is laid on the two inch edge, a key of some sort at least may be made. Where water seepage may occur and the water tightness of the concrete is to be obtained by integral mixes the best method requires the placing of scantling for a key and, in addition, the installation of a copper or zinc strip set vertically to form a watertight dam. In any event the specifications should require that all laitance be removed from the surfaces of previous days' work, the waste swept off and the concrete then drenched and covered with a thin cement grout or one of the several available special bonding agents.

Vertical work planes occur at times, as well as horizontal planes. Should it be necessary to carry up one portion of a wall higher than another in a form that is continuous a bulkhead must be placed

XUM

to stop the concrete. This bulkhead should have a key scantling placed on its inner face so that the proper keyed bond will be obtained. It is not likely that any precautions other than those given above will require observance in the ordinary building. Special cases will occur where unusual factors require particular attention and the specification writer must be on his guard to detect such instances while checking the drawings.

In reinforced concrete work the effect on the strength of the structure is the controlling factor in the location of work planes. The concreting of beams, girders and slabs must be stopped at the exact center of the span and in a vertical plane. Where the "pan" system, consisting of tee beams and their slabs, is used the specifications should prohibit the forming of work planes between the slabs and beams or girders. This rule also applies to other tee beams and similar cases, where the action of the concrete depends on a monolithic, integral construction. A similar rule applies to work planes between columns and beams or girders. Where beams or girders are connected to columns (and in architectural practice this is the general rule) the column should be poured to the under side of the lowest beam or girder, and in all cases, the columns should be entirely complete in each story height, poured in one continuous operation.

The concrete for floor slabs, girders, beams or columns should be allowed to settle for at least two hours before the succeeding concrete is placed on them. This is quite an important element and should be specified distinctly. Where footings or walls should be poured in one operation the specifications should mention such needs unequivocally. This may occur in foundation work that is to be waterproofed where the possibility of work planes is not to be considered. Other needs of such precautions will occur and should be covered in a correct manner.

Where faces of concrete are exposed to premature drying the greatest utilization of the strength of the concrete will not be possible. On occasion custom sanctions the removal of forms from one side of a wall within twenty-four to thirty-six hours after the last concrete has been placed. Since it is not always possible to anticipate the exigencies that will require the early removal of forms, or in the case of floor slabs, the easy protection of finish topping that may be placed on them (as customary in some classes of industrial buildings), the specifications should require that attention be given the prevention of premature drying out of the concrete. It is not well to specify the exact methods to be followed unless one desires to assume the responsibility that will rest with him when laying down conditions to produce certain results. It is generally better to trust the judgment of the contractor and the architect's superintendent to see that this work is accomplished in the most feasible manner. For the best quality of concrete the exposed surfaces should be kept dry for at least seven days. A shorter period may be sufficient, according to the moisture content of the atmosphere. In freezing weather other precautions, rather than the wetting of surfaces, must be resorted to, as the experience of the one in charge of the operation may dictate.

Since construction methods have been improved to such an extent as to permit the carrying forward of concrete work through winter weather the specifications should provide that precautions should be taken to see that the concrete poured at such times is adequately protected from freezing. The green concrete not only freezes but it may expand when frozen to such an extent as to cause damage of considerable amount.

The specifications ordinarily should not specify the manner of constructing expansion joints as this should be shown on the drawings. But it is necessary to specify that such joints are to be provided and indicate exactly how the separation is to be made and also the kind of filler that is to be used. Some thought might be given to the effect of expansion of roof slabs on the parapet walls, especially when the enclosing walls are carried outside the outer face of the structural framework. The reason for this suggestion lies in the fact that most roof leaks occur at flashings along vertical surfaces and it may be possible that a little thought on this factor may provide the explanation for some leaks the reasons for which have not been understood heretofore. No particular experience can be cited to prove that there may be merit to this suggestion; consequently it is given for what value there may be in it.

In some buildings that are to be faced with limestone the concrete framework may provide for some beams or slabs to bear on the walls that are so faced. If the forms for this concrete work are erected and the concrete poured complete before the enclosing walls are built it is not likely that damage will occur to the stone through staining, by the concrete. If, however, such wall bearing construction is to be placed after the walls are built the specifications must lay down certain protective measures that must be followed to prevent staining of the stone. The Indiana Limestone Quarrymen's Association recommends the omission of back-painting or stain-proofing and consequently all built-in faces of the stone would be exposed to cement stains. The concrete should be so designed that there will be at least one vertical course of brick between the stone and the concrete but as this is sometimes difficult to accomplish the most dangerous condition must set the standard of preventive measures. Dry roofing felt may be

placed against the brick or stone or the brick may be coated with an asphalt compound. The type of protection requires careful study and it is hoped this suggestion will save some cautious specification writers from unfortunate difficulties.

In many construction operations, especially those of lesser magnitude the temptation to store materials on green concrete seems hard to resist. The specifications should prohibit the indiscriminate storage of materials on green slabs, especially during the time the forms are in place, and should require that no materials be placed on the reinforced concrete work until the architect gives permission for such use.

The matter of the removal of forms has been discussed in a previous article but a synopsis of it will be given here. Forms should not be removed until the architect so directs. His instructions should be based on the rule that floor slab forms should remain in place not less than seven days, the soffit forms for beams and girders two weeks and column forms seven days. Forms for sides of beams and girders may be removed when the floor slab forms are removed. Forms for exterior basement and retaining walls should not be removed until the forms supporting floor construction bearing on them have been removed. Where a retaining wall, such as an area wall, occurs the forms for it should be allowed to remain in place at least two weeks if the earth is bearing directly on the wall.

Upon the removal of forms the surfaces of some walls may require mechanical surfacing. This desideratum must be determined in the specifications and it may be necessary to ask for a unit price to cover such surfaces as later developments may require to be surfaced. Mechanical surfacing may be accomplished by hand, air or electric tools, in a number of different finishes. For general appearance a rubbed surface, produced by a rotary grinding wheel, removing the form marks, will be sufficient. More decorative finishes may be obtained, usually to the complete satisfaction of the architect. The concrete must be allowed to harden to some extent, the degree of hardness varying for the different finishes. For the finer ground surfaces the concrete should be quite hard, while for a chipped, straight tooled surface or bush-hammered surface the concrete may be somewhat softer.

Some building inspection authorities require the making of tests on reinforced concrete construction —generally floor slabs only—and the specifications should provide for the making of such tests in accordance with the legal requirements. The construction of the gauge should be specified, as also the number of readings and intervals between each series. As such tests essentially are made for workmanship and not design it is proper that the contractor do the testing, furnishing loading material and other needed items, as a part of his contract.

As a precaution it would be well to have the specifications require a general checking of locations on inserts, sleeves, thimbles and all other built-in devices after concrete has been poured so that incorrect or displaced items may be made correct without the trouble and delay that would ensue if this were postponed to a later date.

In a particular building there may be many features formed in concrete that are of a special nature and that must be given attention in the specifications. These may comprise a considerable part of the work when measured in dollars and consequently require particular attention. The judgment of the specification writer must be depended upon to eliminate descriptive matter that is or should be shown on the drawings and confine his instructions to the specific features only.

For the waterproofing of basement spaces the specifications either must be quite explicit in the choice of materials and their installation or else they must state only those surfaces that are to be made watertight and leave the materials and methods to be chosen by the contractor, with a general guarantee that the work is to produce a watertight shell.

In either case the water hazards must be described fully, that is to say, the facts regarding average water level, hydraulic head, character of walls and footings, means of joining walls and columns to footings and floors to columns and walls. Much of this will be shown on the drawings but the specification, to be complete, should carry a description of all conditions that will have a bearing on the final result.

DEPARTMENT OF ARCHITECTURAL ENGINEERING

STRUCTURAL DESIGN PROBLEMS

A discussion of the present importance of the items of restraint, continuity and unbalanced moments

THE student of the mechanics of materials and structures first encounters the item of restraint when he learns that bending moment co-efficients are considerably modified by end conditions. He learns that $M = \frac{WL}{8}$ for a beam freely resting on end supports, becomes $M = \frac{WL}{12}$ when the beam is attached to the supports. Unfortunately many do not understand the "How" and "Why," their ignorance not being manifest during the period when their problems are simple and all their work is with wood and steel formed into standard shape and sizes. Such men experience much anguish of spirit when called upon to use reinforced concrete, for work in this material cannot be satisfactory unless one understands how continuity in a structure creates restraint and restraint sets up bending moments in the restraining members.

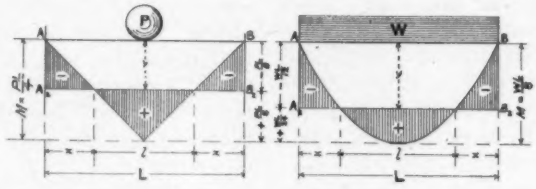


Fig. 1. The restrained beam with a concentrated center load and a uniformly distributed load

Take the case already referred to of a simple beam converted into a restrained beam by attaching the ends to supports. When a load is placed on a beam it deflects and the ends rise if they are free. To convert it into a restrained beam it is necessary so to fasten the ends that at the support the fibers will be horizontal and remain horizontal no matter how heavy the load. Any load will cause a beam to bend but, owing to stiffness, downward bending of a restrained beam begins at a point some distance from the support. The restrained ends form cantilevers carrying a suspended span. The end of the cantilever section where the neutral plane reverses curvature is variously known as the "point of inflection," "point of contraflexure," or "point of reverse bending moment."

In Fig. 1 two beams of single span are shown, one carrying a concentrated load, P, and the other a uniformity distributed load, W. The line A, B represents the neutral axis of the beam. A condition of complete restraint exists when the beam extends beyond A and B a certain distance and the ends carry loads which set up negative bending moments balancing the positive moment on the beam. The imaginary end extensions are called "mirror beams" and an equally good idea may be had by drawing the bending moment curve, a triangle under P, a parabola under W, and dropping A to A_2, and B to B_2, so the sum of the negative moment areas on the end spans x, will be equal to the positive moment area on the intermediate span l.

Consider first the concentrated load P. Neglecting the weight of the beam, $M = \frac{PL}{4}$. Plot this to any scale downwards from the line A, B and draw lines from the end to A and to B. A triangle thus made is the bending moment diagram for a concentrated center load and the bounding lines are called the "moment curve." The curve includes a "moment area" which is equal to $\frac{AB \times M}{2}$, which is the expression for the area of a triangle having a base A, B and a height M.

The problem is to drop the neutral plane A, B to a position A_2, B_2. Divide the moment area by the base, A, B, thus obtaining y. Set off this distance downward from A, B and draw a line from A_2 to B_2.

From the principle of similar triangles $x = \frac{L}{4}$ and $l = \frac{L}{2}$, this fixing the positions of the points of contraflexure. The moment areas were equated by superimposing upon the moment area figure a rectangle of equal area with equal base.

For the uniformly loaded beam the moment area diagram is a parabola with a height equal to the maximum bending moment, which is $M = \frac{WL}{8}$. The area of a parabola is equal to two-thirds the height multiplied by the base. Two-thirds of M is y, which is set off below the line A, B and a parallel line A_2, B_2 is drawn, thus superimposing on the parabola a rectangle of equal area with equal base. The sum of one end negative moment and the positive moment for the short suspended span, l, is equal to the total moment as shown in the drawing. The length of x remains to be found.

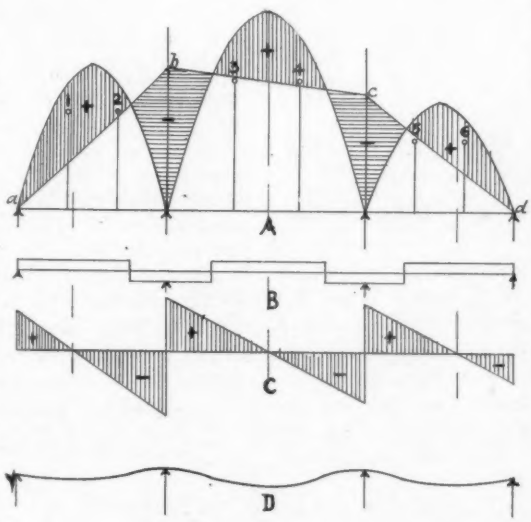


Fig. 2. The Continuous Beam, Method of Characteristic Points

Let w = load per lineal foot and $\frac{wl^2}{8} = \frac{wL^2}{24}$;

eliminating w and dividing; $l^2 = \frac{L^2}{3}$

$$l = \sqrt{\frac{L^2}{3}} = \frac{L}{\sqrt{3}} = \frac{L}{1.732}$$

When $L = Unity = 1$, $l = 0.5773\ L$; then $L = 2x + l$, and $x = 0.2113\ L$.

CONTINUOUS beams rest on three or more supports, the usual condition being that of non-restraint. The usual analysis assumes an edge, sharp or rounded, at each support and thus each span is freely supported. When any span is loaded the tendency of the ends to rise is counteracted by the stiffness of the beam in the adjoining span or spans. If the moment of inertia is constant throughout on equal spans and each span is uniformly loaded with the same unit load a condition of nearly complete restraint exists over all interior supports. The extreme ends must be attached to their supports to produce complete restraint in each span.

In the usual analysis of continuous beams no bending is set up in the supports, a condition which is never realized in practice. All restraint is assumed to be caused by the stiffness of the beam, whereas in practice the width of the support causes friction and the support is pulled toward the more heavily loaded span in case of unequal loading. In many structures there is a positive connection of beams to supports and the structure responds throughout to deformation in any span. Maxwell's Theorem of Reciprocal Deflections covers this condition and will be referred to in a succeeding article.

Fig. 2 illustrates a simple graphical method for determining bending moments, shears and reactions in continuous beams. It is known as the Method of Characteristic Points and was first described by Prof. T. Claxton Fidler in *A Practical Treatise on Bridge Construction*, about 30 years ago. In the example selected the beam has unequal spans and is uniformly loaded. On each span the bending moment curve, a parabola, is drawn as if each span were freely supported.

After drawing the moment curve each span is divided into three equal parts and vertical lines are erected as shown at *1, 2, 3, 4, 5* and *6*. The length of each line is equal to two-thirds the height of the parabola in which it is contained. The small circle at the upper end encloses the "characteristic point" at the end of the line.

In this example the extreme ends of the beam are not restrained so *1* and *6* are disregarded in the work that follows. In each end span a straight line is drawn from the end support on an upward slope to pass near *2* and *5* to an intersection with a vertical line extended upward through the interior support. The points of intersection are connected by a straight line across the center span, giving a broken line *a, b, c, d*.

This line can occupy but one position; which is located by trial. It must close at the end supports

a and *d*. From *a* it passes below point *2* to *b* and from *b* it passes above point *3*, at distances inversely proportional to adjacent spans. For example, if the spans were equal the distance the line, *a*, *b*, passes below *2* would be equal to the distance the line, *b*, *c*, passes above *3*. The spans being unequal the distance below *2* exceeds the distance above *3* in the ratio of the second span divided by the first. In the third span the line

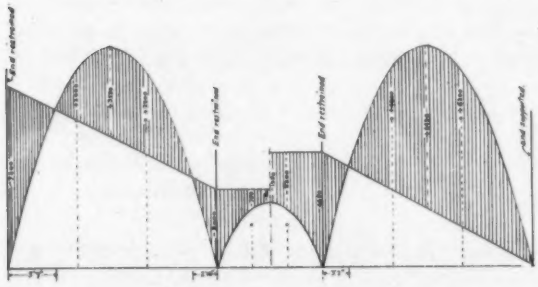


Fig. 3. Cross-section of a school floor with full dead and live loads

from *d* to *c* passes above *5* and the line from *c* to *b* passes below *4* in a similar fashion. When the closing line is located the bending moment at any point is the vertical intercept between the closing line and the moment curve. Intercepts on the interiors of the moment curves are positive, as shown by vertical hatching; intercepts on the exteriors being negative, as shown by horizontal hatching.

Assuming the extreme end supports to be restrained the closing line will pass through *1* and *6*, closing on a vertical line extended upward through *a* and *d*. There is but one possible location for the closing line, which must pass on opposite sides of adjacent characteristic points.

At *B* the lengths of the cantilever and suspended spans are determined by vertical lines dropped from the intersections of the closing line with the moment curve. The shears and reactions are shown at *C*, the point of zero shear being determined by a vertical line dropped from the point of maximum positive bending moment. The reaction on the edge of each support is equal to the shear at that point, the total reaction on any support being the sum of the positive and negative shear. The deflection of the beam, greatly exaggerated, is shown at *D*.

The Characteristic Point Method may be applied to any number of spans, equal or unequal and for any condition of loading. Kidder gives graphic methods to use for determining bending moments in beams for all conditions of loading. For concentrated, or combined distributed and concentrated, loads such bending moment diagrams are constructed instead of parabolas. The spans are divided into three equal parts by vertical lines and characteristic points are marked on these lines. The shape of the bending moment curve determines the heights of these points, it being necessary first to find the total moment area.

Let A = the total area of the moment diagram.
x = distance from left end of span to center of gravity of the moment area.
L = span.

then $\frac{2\,A\,(L-x)}{L^2}$ = height of point at left

and $\frac{2\,A\,x}{L^2}$ = height of point at right.

The points being located the closing line is drawn as described for Fig. 2.

The preceding work applies only to beams with constant moment of inertia. If, owing to differing span lengths, different loads, etc., changes in section are made in the continuous beam, so the moment of inertia on any span differs from that on an adjoining span, a slight alteration in procedure is made. The heights of the moment curve are computed on each span by using the true span length and loads. To draw the figure and obtain the characteristic points, the closing line, shears and reactions, use artificial spans obtained by dividing the moment of inertia *in inches* by the span *in inches*. On these artificial spans erect the true moment heights and draw the moment curves.

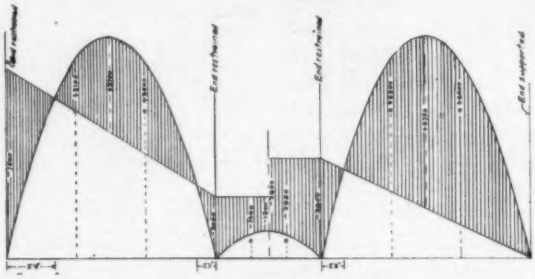


Fig. 4. Cross-section of a school floor. End spans with live and dead loads. Corridor span without live load

ABOUT ten years ago a school building was built in a mid-western state, the floors being of reinforced concrete. The designer used specifications required in a near-by city and took for coefficient *c*, 10 for the outer spans and 12 for the corridor span, in the formula $M=\frac{w\,l^2}{c}$. The effect the two long spans would exert upon the short middle span was not taken into consideration. The designer confessed later that he had never studied the theory of continuous beams, blindly using formulas given to him in ordinances and hand books.

The contractor for the terrazzo floor of the corridor was twice required to replace the floor on account of cracking. He employed the writer to help him out of trouble when cracks again appeared. Fig. 3 shows the diagram the writer made to ascertain the bending moments for total live and dead loads on the three spans. To economize space but one-half the width of the building was drawn, it being symmetrical about the vertical line through the middle of the short center span. It was thus possible to show conditions on the left assuming perfect restraint at the wall and on the right assuming the end of the slab to be freely supported. No positive moment was found in the intermediate span.

The assumed conditions could exist only for a few minutes when the two school rooms might be occupied and children would be marching through the corridor. Fig. 4 was then prepared by assuming the school rooms to be occupied and the corridor empty, that is, the center span carrying dead load only and the long outer spans carrying live plus dead load. This is the condition existing during practically all of the school day.

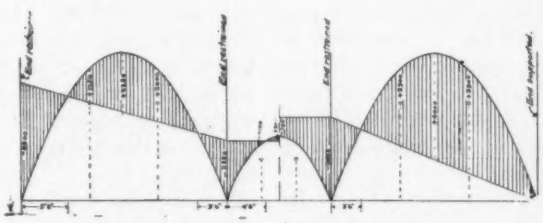


Fig. 5. Cross-section of a school floor. Corridor with live and dead loads. End spans without live load

Fig. 5 was prepared on the assumption of conditions which might exist for a few minutes during each recess period, corridors with full live load and school rooms empty. Loading tests confirmed the diagrams and the terrazzo floor contractor was paid for the extra work he had been compelled to do because of faulty designing. Some of the reinforcement over supports was cut in order to reduce the effect of continuity to the amount originally assumed by the designer and no more trouble was reported.

(To be continued)

ELECTRICITY IN THE HOUSE

V—THE BED ROOM

BY M. O. WHITTON

IT is only of very recent years that anyone has paid much attention to the adequate wiring of a bedroom. Before that, people were supposed to be content with one bracket lamp, placed somewhere near the door, or a central fixture, from which depended a lengthy brass chain, or sometimes even a piece of string, for which the owner fished in the dark. Nor was that individual supposed to complain; he was to be thankful that he didn't have to light a match besides. If one were very particular, the central fixture might be switched from the doorway, but that was about the loftiest flight of imagination in the way of electric luxury in a sleeping room.

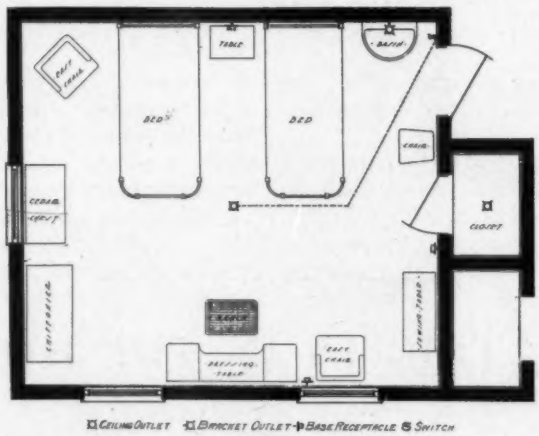
One suspects that the impetus towards improved bedroom wiring came from city hotels which seized upon the advantages of electric lighting, to add to the attractiveness of rooms otherwise none too large or light. Hotels started the custom of placing a bracket so that patrons might read in bed; hotels switched their lights from convenient places in the hope that guests might thus be encouraged to turn them off when not in use; hotels installed bracket lamps on either side of bureaus and dressing tables, so that patrons would have no cause to complain of lack of daylight. And the home-owning and home-building public, occasionally patronizing these hotels, enjoyed these conveniences and gradually set to work having them installed in their own premises.

Action and reaction being equal and opposite in this as in all things, from undue neglect of bedroom wiring, we swing to possible over-emphasis, for now we hear not only of the most elaborate wiring plans, but also of complete sets of bedroom furniture entirely wired for every possible emergency in the life of man,—or woman. Furniture dealers, we are told, are keenly interested in the new development, and predict the largest of sales from it providing,—and here follow some practical suggestions worth noting. It is thought that the present standard wiring fittings for wall work will have to be adapted and made smaller for furniture; and it is intimated that the wiring ought

XUM

to be somewhat simplified so that its cost, added to that of the furniture, may not be prohibitive of popularity.

Bearing these suggestions in mind, it seems possible to outline a wiring plan for a bedroom, which shall be sufficiently flexible to meet present-day usage, and still escape the pitfalls of the faddish or the extravagant. While the greatest possible wiring elaboration, both as to room and to furniture may be desirable in certain definite circumstances, yet for ordinary conditions, a compromise between the two extremes will usually be found happy. In selecting and furnishing a room to typify the modern sleeping room, the writer has consciously refrained from recommending the wiring of everything possible to be wired, in favor of presenting a room suitable to the intelligent use of an intelligent family.



A home bedroom may be as convenient as a hotel bedroom when adequately wired

The room here depicted is 14 by 16 feet in size and has daylight on two sides. Between two windows on one side will be found the dressing table, while the chiffonier is placed in the corner where it will receive daylight from two sides. Beds, flanked by a hand basin, are placed on the longer wall opposite the two windows, while a closet door breaks into the fourth wall. The sewing table is placed between this and the window to the left of the dressing table. Two easy chairs, two small chairs, a cedar chest used as a window seat, and a small table between the beds complete the furnishing of this room.

The lighting arrangements themselves are also comparatively simple. In a room of this general size and description, one central fixture, controlled by a switch to the right of the entrance door, will be found sufficient for general illumination. Over the wash basin, however, a bracket light is added. Were the room larger or darker, two brackets might be allotted at either side of the dressing table, but for the arrangement shown here, the central lighting fixture will probably give all the needed illumination at the dressing table. To the left of the table, however, a double wall outlet or baseboard receptacle is recommended; this would supply a lamp to be placed upon the dressing table, if local illumination were desired, and also an outlet for connecting the electric curling iron, hair dryer, and other toilet articles usually considered more or less necessary for feminine comfort. If it were desired, one of these outlets could be connected to a socket placed upon the dressing table itself, at the back or in some other inconspicuous location. In some instances, it might be thought better to have the dressing table itself entirely wired; this however, would depend upon the tastes of the occupant of the room.

To the left of the sewing table, another baseboard or wall outlet is indicated. This would serve as source of supply for a small electric sewing machine, which could be stored away in the closet when not in use, and then set out upon the sewing table. This location would also be a suitable point from which to operate the vacuum cleaner, or into which to plug an electric radiator in cool weather. For the closet, an electric light is most emphatically recommended. It may be placed in the simplest of fixtures, or it may dangle at the end of a utility cord, but even in its crudest form it will be of the greatest convenience to the householder.

But one more source of supply remains to be explained, and that is the double baseboard or wall outlet indicated between the beds, and behind the small table. The question then arises, shall the beds themselves be wired, or will some lesser degree of modernity be found satisfactory. The full program for wired beds requires wooden frames, into the head of which are inserted bracket reading lamps. Under one or both beds would also be a small light, designed for night use, or in case of sickness. Then, at a convenient spot for use from the bed, there would be a socket for the plugging-in of a heating pad, cooking device, fan, vibrator, or whatever appliance was needed by the occupant of the bed.

Against this full program are a few objections; for instance, at the one extreme would be pieces of furniture of such value that no one would like to have cut into; at the other extreme would be the modern metal bed, which could not be cut into. The writer believes that in many cases a middle course may be well taken by making use of a small table placed between the beds, as indicated in the plan, and having this table wired, so that it can supply a reading lamp, and the desired connection point for the electrical appliances to be used in

case of illness, or for greater convenience in taking care of an invalid. This wiring of a bedside table is a part of the wired furniture program that the writer can heartily recommend as simple, inexpensive, and highly effective in promoting comfort in living.

A discussion of the proper wiring of sleeping rooms would not be complete without a few suggestions for the arrangement of children's rooms or nurseries. The wiring would not differ greatly in essentials from that for the adults' sleeping room, except that it would probably be simpler. Care should be taken that the light will not shine in the eyes of the child when in bed, for the younger the child, the greater the possible injury to the eyesight. If the architect is unable to govern the placement of the furniture, he can bring out the same idea, by using two or more small bracket lights (depending on the size of the room,) and having these equipped either with fairly low wattage lamps or ordering frosted bulbs for the fixtures. Because of its greater safety, and freedom from fumes of all kinds, an electric radiator is usually provided as an auxiliary heating device in a child's room, and this should be operated from a baseboard or wall outlet. As in other rooms, it is better to make this a double outlet, so as also to arrange for the use of the vacuum cleaner, a heating pad, a milk warmer, hot water cup, or similar appliance that would be employed in the care or feeding of a young child. As a last possible precaution against accident, the architect can order his lighting brackets to be of the torch design, rather than the type of fixtures with pendant bulbs since the latter may possibly become loosened and fall upon the head of some unlucky or inquisitive small person.

Notes on Materials of Construction

A SERIES of interesting tests was conducted at the Underwriters' Laboratories at Chicago on April 6, for the purpose of testing frame construction covered with metal lath and three coats of plaster. The tests were made on completed floors and walls in full size sections about 10 feet by 10 feet in size. It is reported that after an exposure to intense heat for one and one-quarter hours the covering was still intact and the wood only slightly charred on the edges.

THE Slate industry in joining the movement to eliminate waste is urging upon architects the advisability of considering this material for copings, sills and heads of windows, steps, walks and even walls of buildings. Much good along these lines, has been accomplished. Slate is also an excellent material for carving and has been used in the form of rough stone panels with carved letters. When the material is thus utilized the percentage of waste in quarries and yards will be reduced, this in turn resulting in a lessened cost of slate for roofing and structural purposes.

In a study of slate sizes for structural use, water closet enclosures were studied and it was found that by a slight change in a long used form of joint where the ends and partitions joined the back, that one hundred and twenty combinations and sizes of enclosures could be produced from only thirty-five sizes of slabs.

Nearly all such enclosures had the ends run into the back wall and the backs set between them, making the ends one inch wider than the partitions. Butting the ends against the backs, made both ends and partitions the same size, reducing thus the time of getting out two different sizes of slabs and the storage, selection, packing and checking up of their installation at the job. The same is true of the backs. By making the end enclosures one-half inch narrower than the interior enclosures, it was found possible to make all back slabs exactly the same width, with corresponding simplification of production and use.

IN July, nineteen-twenty, several hundred representatives of the wood working industries of America, assembled at Madison, Wis., to celebrate the tenth anniversary of the founding of the Forest Products Laboratory. In commemoration of the event a Decennial Record was printed and is now being distributed.

The uses of wood are manifold, yet more than one-half of the timber cut each year is for structural use. The laboratory is collecting data for determining the use and design of wood and things made of wood; effect of defects; the selection of wood; the standardization of grading rules and building codes and the economic utilization of structural timbers. All this is told in the record, together with a history of the war work of the Laboratory, a fascinating story in itself; as well as work done for the makers of containers for shipping goods; the preservative treatment and the chemical utilization of wood. The record is a well printed and handsomely bound book of 196 pages, the price of which is $1.75 the copy, as long as the limited edition lasts.

ALUMINUM shingles are now on the market. The cost of reducing this metal has been falling rapidly since the war. Stories are circulating in chemical circles to the effect that in some industries material from which aluminum may be produced in an embarrassing by-product so that aluminum at five cents a pound or lower is not an unlikely possibility.

The new aluminum shingles are said to be as

XUM

enduring as bronze, as light as paper, as agreeable in color as aged wooden shingles and easy to apply. The cost is said to be about the same as tile at present. There are 86 shingles to 100 square feet, the exposed surface being 12 by 14 in. The weight is about 40 lbs. to the 100 sq. ft.

APART from the larger displays by the Bureau of Standards and Federated Engineering Societies, one of the features of the recent Building Conference held by the National Federation of Construction Industries at Chicago in April, one particularly commended was that installed for the Indiana Limestone Quarrymen's Association. It showed the progress that has been made in the adoption of a uniform classification for a building stone, standard specifications and standard practice relating to the furnishing of samples.

A VENERABLE brick from the Great Wall of China passed the customs officials and has just been received by the Engineering Museum of New York University, said the *New York Evening Post* in a recent issue. The brick was secured by Dr. Lawrence A. McLouth, professor of Germanic languages and literature at the university, who returned last fall from China after spending a year as exchange professor at Tsing Hua College in Peking.

The United States customs officials, although familiar with the collections of antique hunters, were more than usually suspicious of the brick. They drilled into it, sawed an end off it, and tested it in various ways for smuggled goods, but, finding it harmless, finally released it.

The Portable Motion Picture Booth

MANY states and municipalities have passed laws requiring the use of portable booths for motion picture exhibitions conducted in assembly rooms not equipped with standard fixed booths. The natural inference to be drawn from this legislation is that a good portable booth is regarded in many localities as adequately safeguarding the use of nitro-cellulose film. Portable motion picture booths are frequently used in places where the discharge of either flame or smoke in the room would have a tendency to produce a panic, while the flame might ignite combustible material in the vicinity, and the smoke carries with it the additional danger of suffocation.

The April, 1922, *Quarterly of the National Fire Protection Association* contains a report of Underwriters' Laboratories on an investigation of a portable booth designed to minimize the above mentioned hazards and intended mainly for use by non-professional operators in schools, churches, lodge halls and places of assembly where fixed booths have not been installed.

Among the conclusions reached the following are of most interest from the standpoint of safety to life and property:

LIFE HAZARD:

The booth as designed does not furnish the protection to life necessary in a device of this kind.

In each of the Fire Tests either the quantity of smoke or flame was sufficient to induce panic.

SUMMARY:

The investigation indicates that the feasibility of constructing a practical portable booth which can be depended upon to reduce both the fire and life hazard is problematic and emphasizes the desirability of confining the use of nitro-cellulose film to buildings provided with fixed booths vented to outside air and to professional operators.

It is essential that a booth which materially reduces the hazard to life and property should be so constructed as to permit the burning of film without smoke and at the same time so muffle the flames that they cannot be seen in great volume or set fire to combustible material near the booth.

With a view of meeting these essential requirements the manufacturers of the booth forming the subject of this report have insured perfect combustion by providing openings for the admission of air and have unsuccessfully attempted to confine the flame to the booth by wire screening and baffle plates. In general, the results of the test were not such as to encourage the submittors in attempting to control the flame in this manner; and the protection to life and property provided by the final construction is considered as being little if any greater than were the films burned in the open room.

The results of the entire investigation emphasized the necessity for using slow burning film rather than attempting to safeguard the use of nitro-cellulose film under the conditions given.

Gas Made from Leaves

GAS is made by the dry distillation of leaves, says *Industrial Digest*. Such gas has a calorific power of 3500 calories which compares well with coal gas of 5000 calories. This product may be used in the same burners as is employed with coal gas. Inasmuch as foliage gas does not contain even a trace of such impurities as sulphuretted hydrogen, ammonia, etc., which are found in appreciable amounts in coal gas and which must be removed before the latter can be used for lighting or cooking, the new product is very well suited for this purpose. The Deutsche Gas A. G. has applied this process successfully and is using potato plants, pine needles, tan-bark waste, kitchen refuse and other waste products for making gas.

Steel Basement Windows

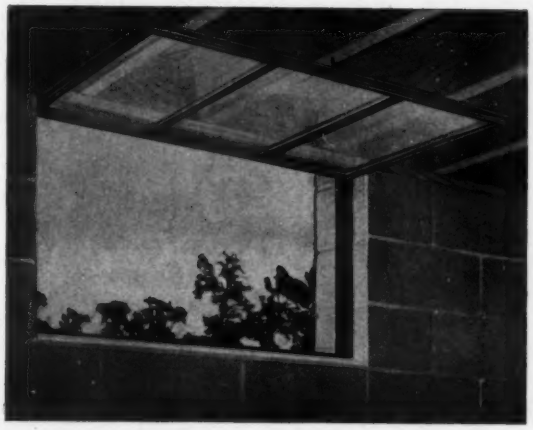
MANUFACTURERS of steel sash have recently placed on the market a new product and the humble cellar window has come in for publicity.

Exterior view of typical basement window with steel frame and sash

The illustrations here presented give a fair idea of the general appearance of a cellar window in which steel is used. The glazed area is about fifty per cent. greater than it is in the same opening with sash and frame of wood.

This exterior view of a steel basement window partly open shows the small obstruction offered by the steel frame

The steel basement window is made in unit sizes and is carried in stock. The sash is attached to the frame by means of heavy steel hinges at the top and swings inward at the bottom. Removable hinge pins allow easy removal of the sash for glazing or protection of the glass.



Interior view of typical steel basement window opened

In cost these windows are formidable competitors of the old established wood type. A number have been installed at prices much lower than were asked for wood sash and frame windows and the difference will be greater with an increase in demand. Not only is the glass area greater but the installation is more simple and readily made; the frame and sash are firesafe, indestructible and weatherproof. An item of great importance is that a steel basement window cannot warp or stick.

The Design of Hotel Plates

TESTS carried out at the United States Bureau of Standards indicate that the design of the rolled edge and the angle of inclination of the rim of hotel china plates has as much effect on the ability to withstand chipping as the properties of the body from which the plate is made. The glazes now in use appear to be sufficiently well constituted chemically to withstand the alkaline solutions employed in dish washing.

Lighting a Basement Stock Room

THE A. C. Eynon Plumbing Company, Canton, Ohio, has a stock room in the basement lighted by prisms set in the floor of the display room. The prism lights have been in use for about ten years and the grinding of the upper surface by the shoes of people visiting the store seemingly has had an effect almost negligible in affecting the transmission of light. The area equipped with prisms is 20 feet by 33 feet and the owners say it is transparent enough to enable them to dispense with artificial light in the stock-room during working hours.

This method of lighting a basement is not uncommon. The news item is of importance as being a record of experience covering a number of years and such records are valuable in relation to their sources.

XUM

THE AMERICAN SPECIFICATION INSTITUTE

19 South LaSalle Street, Chicago, Ill.

BOARD OF GOVERNORS

RALPH W. YARDLEY
Chairman

GARDNER C. COUGHLEN
Acting Executive Secretary

FRANK A. RANDALL
Vice-Chairman

R. JARVIS GAUDY
Chairman, Advisory Committee

CHESTER L. POST

The American Architect and The Architectural Review *has gratuitously set apart this section for use by The American Specification Institute.*

The Editors and Publishers assume no responsibility for any statements made, or opinions expressed.

The purpose, simply stated, is to afford an organization which, it is believed, will become a most important element in architectural practice and building operations, a medium through which it may, without expense to itself, reach a class of readers that are most intimately identified with the field of the activities of The American Specification Institute.

Publishers, The American Architect and The Architectural Review.

ON the first of May the Executive Secretary's office was removed to 19 South LaSalle Street, Chicago. Members are requested to make sure that the new address appears on their records.

The Annual Meeting

The annual meeting of the Institute was held on the first of May at the Hamilton Club, Chicago. The Board of Governors was re-elected, as indicated at the head of these columns. The Board of Governors re-elected Mr. Ralph W. Yardley, Chairman; Mr. Frank A. Randall, Vice-Chairman; Mr. Gardner C. Coughlen, Acting Executive Secretary. The Chairman re-appointed Mr. R. Jarvis Gaudy, Chairman of the Advisory Committee.

The financial report for the past year will be sent to the members shortly.

Chicago District Meeting

After the annual meeting those present started preliminary organization of the Chicago District Section under the direction of Mr. George C. Wright, of George C. Nimmons & Company, the district member of the Advisory Committee.

Meetings of this section will be held monthly and all members in Chicago or vicinity are requested to ascertain from the Executive Secretary's office the date of the next meeting if they are not resident in the district. Those members resident in the district will receive proper notice.

The Spring Conference

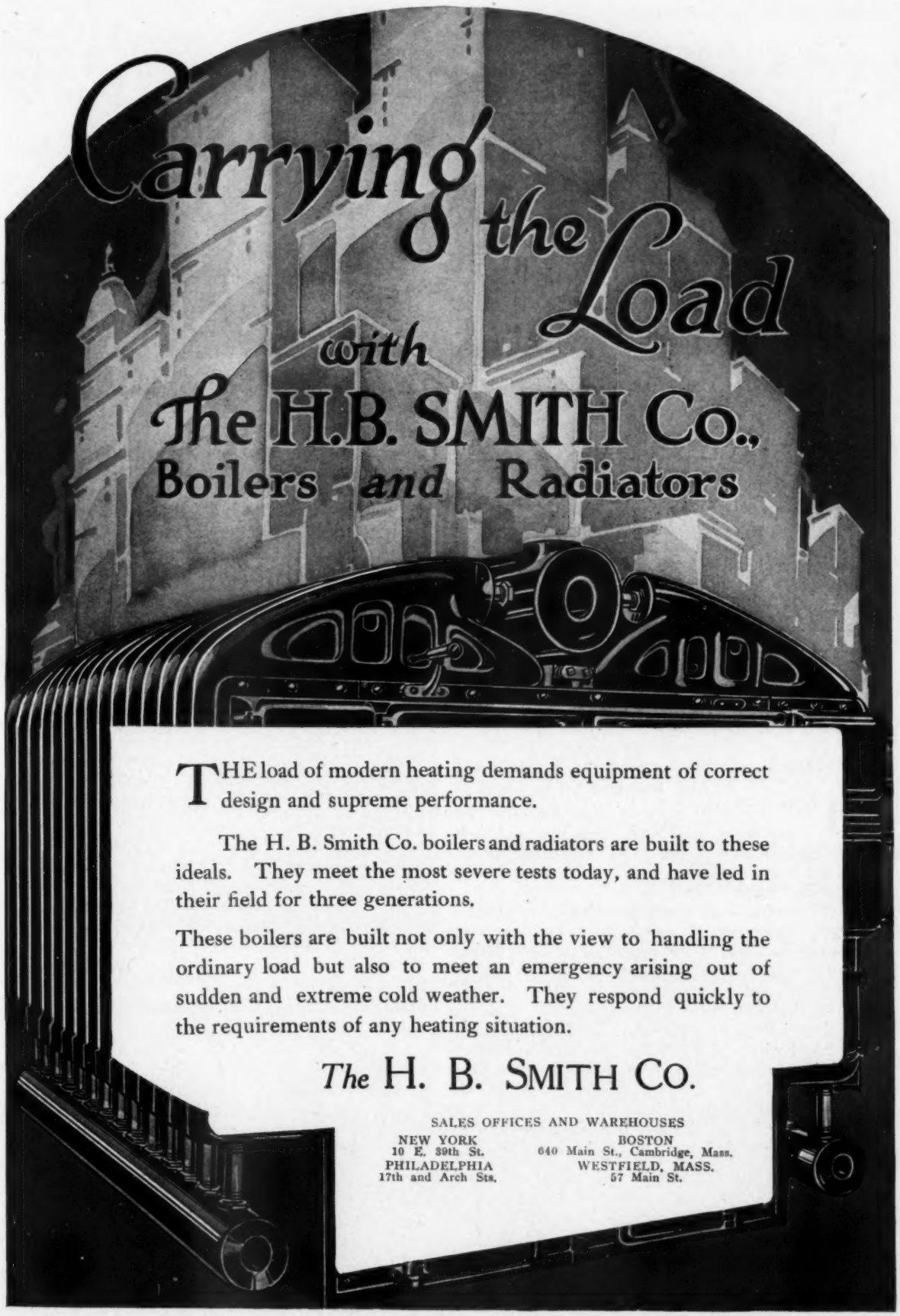
The Spring Conference was held on the evening of April 21 at the Chicago Engineers' Club. Mr. John De Las Cassis, of the W. P. Nelson Company, answered questions and offered many interesting suggestions for the concise preparation of specifications for painting. It was the general concensus that specifications for this branch of construction are sadly in need of improvement and much constructive criticism was offered.

As this Conference was held for the purpose of discovering fundamental defects and analyzing the suggestions for improvement no immediate results were obtained. There is now in preparation a detailed report of the meeting, a copy of which will be sent to each member.

As a result of one suggestion a committee is now preparing questionnaires to be sent to paint, varnish and stain manufacturers and to painting contractors of established reputation to elicit information that will be essential to the clarifying of several phases of this work. Members are requested to send to the Executive Secretary's office the names of painting contractors who will be able, through long and varied experience, to lend assistance of value.

New Members

The following new members have been elected:
Walter Bradnee Kirby, Architect, New York City.
Robert H. Orr, Architect, Los Angeles, Calif.
Delbert K. Perry, Architect, New Britain, Conn.
Jack A. Scanlan, Engineer, Chicago.
J. Binford Walford, Architect, Richmond, Va.
MacKenzie Waters, Architect, Toronto, Ont.
Edgar A. Rassinier, Architect, Louisville, Ky.
Walter Harold Lewis, Architect, Philadelphia, Pa.



THE load of modern heating demands equipment of correct design and supreme performance.

The H. B. Smith Co. boilers and radiators are built to these ideals. They meet the most severe tests today, and have led in their field for three generations.

These boilers are built not only with the view to handling the ordinary load but also to meet an emergency arising out of sudden and extreme cold weather. They respond quickly to the requirements of any heating situation.

The H. B. SMITH CO.

SALES OFFICES AND WAREHOUSES

NEW YORK
10 E. 39th St.

BOSTON
640 Main St., Cambridge, Mass.

PHILADELPHIA
17th and Arch Sts.

WESTFIELD, MASS.
57 Main St.

Elihu Root Receives Medal In Recognition of His Services to L'Enfant's Plan for Beautifying Washington

IN recognition of Elihu Root's services to the commission which undertook the rehabilitation of Washington, D. C., on the original design of L'Enfant, a group of artists and architects on May 3 presented a gold medal to him at a dinner in the University Club.

The group arranging the ceremony comprises about eighty members of the Diplomés Architects Society of New York, the American members of the Société des Architectes Diplomés par le Gouvernement Francais.

"Mr. Root has a long and extremely important record in his efforts in behalf of American architecture," said John Mead Howells, president of the American group, in a statement telling of the honor. "Mr. Root, Mr. Roosevelt and Mr. Taft were responsible for the rehabilitation of the original plan of Washington, D. C., designed by L'Enfant and approved by Thomas Jefferson.

"It was, however, Mr. Root's untiring support which made possible the work of the commission, consisting of McKim, Burnham, Olmstead and Saint-Gaudens. As Secretary of War and Secretary of State he did everything in his power to drive as many stakes as possible in pinning that plan to the District of Columbia, to use his own words.

"Mr. Root also made possible the establishment of the National Commission of Fine Arts in Washington, and he helped to organize the American Federation of Arts."

New Orleans Skyscraper 147 Years Old Still Standing

THE following story of New Orleans' first skyscraper, reprinted from a recent issue of the *Times-Picayune,* is an interesting account of some of the earliest construction work done in the skyscraper field:

"Towering high above the city, the skeleton frame of the new Hibernia Bank building rears its cupola, twenty-three stories in the air. Below, the masons already are at work placing in position the great blocks and graceful arches that will form the outer walls of the structure. It is the highest building ever erected in New Orleans.

"And within sight of the towering cupola, nestled in a strange huddle of dwellings, far down the Rue Royale, the first skyscraper of old, old New Orleans still stands.

"Stripped of all its old time grandeur with its queer narrow hallway and still narrower stairway, it stands a venerable reminder of those other days, when, in its brave finery of hand wrought grills and slender gallery railings, the first skyscraper caused fashionable Nouvelle Orleans to gasp in wonder.

"It was in those brave old days of Spanish occupation, three years before the minute men of Lexington had fired the first muskets in the struggle to make the colonies free, that the first 'towering landmark' was built.

"Tradition still tells of the horrors experienced by those old Creole fashionables when the new owner of that little tract of land on the Rue Royale, at the corner of what is now St. Peter Street, told his neighbors that he was about to build the 'mammoth' four-story-and-a-half 'scraper.' And of the vigorous protests that were made in the old Cabildo, the structure in which Don Alexandro O'Reilly ruled, perhaps to the doughty Irish-Spanish leader in person, against that soaring structure by those who feared that such a spindling, mountainous plinth would topple into the streets if, perchance, the winds blew briskly.

"But, if Don O'Reilly heard these pleas, he was busied with other affairs in those days of 1774. The building shot skyward. Nor were the fears of those old Creoles realized. It still stands today, despite the fire that swept its neighbors to the south, destroying even the Cabildo, in 1780, together with the records that should give the history of its construction.

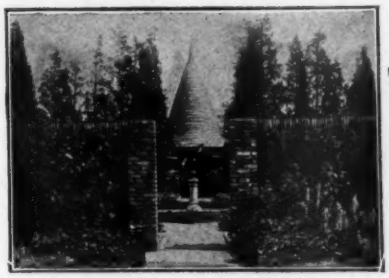
"But now evil days have come to the old building, and now, while its splendid neighbor soars skyward, its status is that of a tenement."

Summer Courses at Pittsburgh

A VARIETY of subjects is offered for the summer session at Carnegie Institute of Technology, Pittsburgh, Pa. Courses of six weeks and eight weeks will be given in the College of Fine Arts, College of Industries, Margaret Morrison College and the College of Engineering.

The work of the summer session at Carnegie is arranged to meet the needs of teachers, undergraduate students, and others interested in technical subjects. The courses for teachers are scheduled for six weeks from July 5 to August 12. Eight weeks' courses will run from June 26 to August 19.

Courses are planned for architectural draftsmen who desire additional training in design and working drawings, and for those who are planning to enter the Institute. Subjects offered are design, working drawings and superintendence and outdoor sketching.



Estate of Otto H. Kahn, Esq., Cold Spring Harbor, L. I.

Delano & Aldrich, Architects.

Tudor-Stone Roofs

—are adaptable to small house construction as well as large residences, schools, churches and public buildings. Our Service Department will gladly co-operate with you in the design of your client's roof.

Write for new booklet and specifications.

THE RISING & NELSON SLATE CO.

Since 1869 Miners and Makers of High-grade Roofing Slates

Quarries and Main Office, West Pawlet, Vermont

Architects' Service Department, 101 Park Avenue, New York

CHICAGO PHILADELPHIA BOSTON

Olde Stonesfield Roofs and Flagging

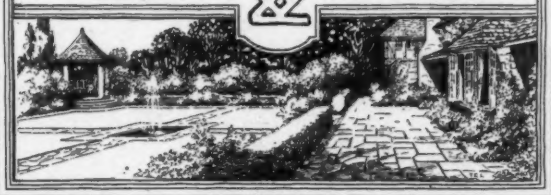
Eugene Dupont, Residence Wilmington, Del. — *H. T. Lindeberg Architect*

Send for Booklet No. 20

THE JOHN D. EMACK CO.

Home Office: 112 South 16th Street Philadelphia

New York Office: 15 East 49th Street



Garage at St. John's Pl. and Howard Ave., Brooklyn, N.Y. Roof supported by 10—112-ft. "Lattis Trusses." Magnuson and Kleinert, Architects.

McKEOWN "LATTIS-TRUSS"

(Patented)

Fulfills Structural Requirements Architecturally At a Minimum of Cost on All Buildings Where Clear Floor Space is Necessary.

Estimate and Information Upon Request.

McKEOWN BROS. COMPANY

CONTRACTORS and ENGINEERS

Exclusive Builders of "Lattis-Truss" Roofs

112 W. Adams St., Chicago 21 E. 40th St., New York

ENGRAVINGS IN "AMERICAN ARCHITECT"

BY

POWERS REPRODUCTION CORPORATION

PHOTO-ENGRAVING SPECIALISTS

137 WEST 37TH ST. NEW YORK CITY

TELEPHONE: FITZROY 1177

XUM

BOOK NOTES

Professor Sabine's Collected Papers on Acoustics*

THE name of Professor Wallace C. Sabine stands pre-eminent and almost alone in the field of architectural acoustics. Accordingly, peculiar interest attaches to the appearance of this volume of his Collected Papers. The Papers, some eighteen in number, have appeared from time to time since 1900 in various architectural and scientific journals. Edited by Professor Theodore Lyman, they now are republished in a single beautiful volume by the Harvard University Press. There thus appears in a permanent and unified form an authoritative treatment of a subject to which, hitherto, the unsupported opinion of divers and sundry persons has added little save confusion.

Thanks to a very clear notion at the outset upon the part of the author as to just what he wanted to do, the Papers constitute a coherent whole. Having outlined for himself in the beginning the essential features of the problem, Professor Sabine has marked out in these Papers the progress of a consistently followed program of careful and extremely thorough research covering a period of twenty-three years. The result is a coherence and unity that would naturally be expected only in a planned book.

In the introduction to the first series of articles that appeared in THE AMERICAN ARCHITECT, the general problem is outlined. Three conditions "that hearing may be good in an auditorium" are: (1) the sound must be sufficiently loud throughout the room, (2) the complex sounds of music and speech must be carried without distortion, and (3) successive sounds must be free from each other and from extraneous sounds. "To take into account the varied conditions each of which would contribute to the results in a greater or less degree, the solution of the problem should be quantitative, not qualitative merely, and to reach its highest usefulness it should be such that its application can precede, not follow, construction." The Collected Papers give in orderly fashion the steps by which this goal has been reached.

The first section of the book deals with Reverberation, and contains an admirable statement of what may be called the Sabine method of acoustical measurements. Experimentally first, then analytically, the simple relations between the time of reverberation and the three factors upon which it depends are worked out. Interestingly enough, the very defect of excessive reverberation is utilized as a means of measuring the sound absorptive properties of various materials as well as that of an audience. From a knowledge of these absorption coefficients and the formulae derived, the important acoustical property of reverberation can be predicted with a close degree of precision in advance of construction for any proposed room.

Space will permit only a little more than simple mention of some of the succeeding papers. The work done at first with sound of a single pitch is extended to cover the whole musical scale. In the paper on the Accuracy of Musical Taste in Regard to Architectural Acoustics, experiments are described showing that there is a strikingly close quantitative agreement in the acoustic properties of rooms which musicians pronounce equally good. In an important paper on the Correction of Acoustical Difficulties, numerous well known examples of acoustical defects, due to widely different causes are cited, with a discussion of available means for their correction. In this paper, too, are given the curves showing the efficiency of the various methods of so-called acoustical treatment.

In the paper on Theatre Acoustics is presented a most instructive series of photographs of sound waves, showing the effects of various reflecting surfaces upon the distribution of Sound Intensity in a room.

Under the heading "Building Material and Musical Pitch" absorption coefficients are given for a number of standard wall surfaces, as well as for special materials developed with a view to their high absorptive merits for sound. Here also are given absorption coefficients for a large number of materials that are used in auditorium furnishings and therefore of importance in determining acoustic properties. There is a single paper upon Sound Insulation. The final paper, hitherto unpublished, taken from the notes of lectures given in the Spring of 1917 is an extremely interesting description and explanation of six of the more famous Whispering Galleries of the world, wherein chance combinations of architectural features have conspired to produce unusual acoustical results.

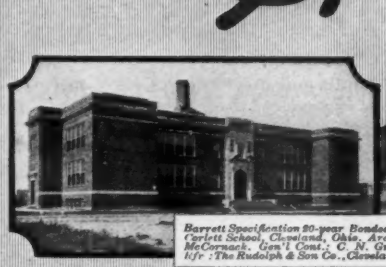
For the most part, the Collected Papers were originally addressed to architects. The treatment is as non-technical as the nature of the subject matter will allow. The style and presentation are lucid to an extraordinary degree. Throughout, language is employed most effectively in the transmission of ideas. The articles are adequately illustrated, and the results of investigation are presented graphically as well as numerically. The author consciously avoids laying down hard and fast rules of lines and proportions, recognizing that acoustical considerations must always be *only*

---

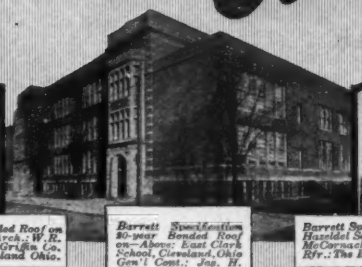
* *Collected Papers on Acoustics by Wallace Clement Sabine. Full Cloth. 275 pp., size 7½x10 inches. Harvard University Press, Cambridge, Mass.*

Barrett Specification Roofs

Bonded for 20 and 10 Years



Barrett Specification 20-year Bonded Roof on Corlett School, Cleveland, Ohio. Arch.: W. E. McCornack. Gen'l Cont.: C. N. Griffin Co. Rfr.: The Rudolph & Son Co., Cleveland Ohio.



Barrett Specification 20-year Bonded Roof on—Above: East Clark School, Cleveland, Ohio Gen'l Cont.: Jos. H. Wells Rfr.: Norton Bros., Cleveland, Ohio.

Left: Addison School, Cleveland, Ohio. Arch.: W. E. McCornack. Gen'l Cont.: C. N. Griffin Co. Rfr.: The Rudolph & Son Co., Cleveland, Ohio.

Right: Miles Standish School, Cleveland, Ohio Arch.: W. E. McCornack. Gen'l Cont.: The Drummond-Miller Co. Rfr.: The Dalsell Bros. Co., Youngstown, Ohio.

Barrett Specification 20-year Bonded Roof on Hazeldel School, Cleveland, Ohio. Arch.: W. E. McCornack. Gen'l Cont.: Keough Const. Co. Rfr.: The Rudolph & Son Co., Cleveland, Ohio.

Cleveland's New School Buildings

TO house its army of 122,000 public school pupils, the City of Cleveland has provided many splendid new buildings. Architecturally, they are masterpieces—models of convenience, comfort, safety. And in line with standard practice the country over, most of these schools are covered with Barrett Specification Bonded Roofs.

One reason for the popularity of these roofs is, of course, their unequalled economy—moderate cost, long service, and no upkeep. But another reason, and a very important one, is their high fire-resisting qualities.

When burning brands fall on the slag or gravel surface of a Barrett Specification Roof, they burn themselves out without doing serious damage. If a fire inside the building weakens the roof-deck, the Barrett Specification Roof has the necessary tensile strength to support itself over a large area, thus effectively blanketing the fire.

The degree of fire protection afforded by a roof is not determined by the character of any one ingredient of the roofing material, but by the ability of the completed roof to resist fires that attack it, whether from the inside or the outside of the building. Barrett Specification Roofs are given base rating by the National Board of Fire Underwriters.

There are two types of Barrett Specification Bonded Roofs—Type "AA" bonded for 20 years; and Type "A" for 10 years.

Before specifying or closing contract for a Barrett Specification Bonded Roof, be sure to read carefully all the stipulations in the Specification.

Full details regarding these Bonded Roofs and copies of The Barrett Specifications sent free on request

The Barrett Company

New York	Chicago	Philadelphia	Boston	St. Louis	Cleveland	Cincinnati	Pittsburgh
Detroit	New Orleans	Birmingham	Kansas City	Minneapolis	Dallas	Syracuse	Peoria
Atlanta	Duluth	Bangor	Salt Lake City	Washington	Johnstown	Lebanon	Youngstown
Milwaukee	Toledo	Columbus	Richmond	Latrobe	Bethlehem	Elizabeth	Buffalo
Baltimore	Omaha	Houston	Denver	Jacksonville			

THE BARRETT COMPANY, Limited

Montreal Toronto Winnipeg Vancouver
St. John, N. B. Halifax, N. S.

Barrett Specification 20-year Bonded Roof on West Technical High School, Cleveland, Ohio. Gen'l Cont.: C. N. Griffin Co., Cleveland, Ohio.

Barrett Specification 20-year Bonded Roof on Empire School, Cleveland, Ohio. Arch.: W. E. McCornack. Gen. Cont.: Alexander Bros. Rfr.: The Rudolph & Son Co., Cleveland, Ohio.

XUM

a part of the architect's problem. However, the fundamental principles are so clearly set forth, and so fully illustrated by examples, that there should be, henceforth, little excuse for the perpetration of "acoustical crimes" by the architect who is willing to accept acoustics as *at least* a part of his problem. It is not too much to hope that the appearance of such a work may do much to stem the flood of charlatanism that seems unfortunately to flow about the subject of acoustics of buildings.

A Book of Building and Decorative Suggestion*

MOST books, written or compiled to afford suggestions to the prospective home builder, fall short of their purpose. The Country Life Book of Building and Decorating is not of that class. It avoids the many impractical suggestions that make the architect so unhappy, when a client, armed with a book that misleads, insists on things that the architect knows the client should not have. Country Life's book is composed of a series of authoritative articles, published during the past year, covering every phase of the aesthetic aspects of home building. The articles are by people who know their topics and how to write about them. As a preliminary reading by clients, preparatory to a decision, this book will be helpful, and it is one that architects may safely recommend, and which they may also read with profit.

The work presents, first, a series on building in various materials. It then proceeds to discuss the many aspects of furnishing of the various rooms, the practical problems of heating, lighting and sanitation, and all the many decorative schemes that are proper to good taste and in artistic harmony with the type of house selected.

There are many valuable suggestions in an article on "What We Should Know About Plumbing." Equally good is a discussion of the radiator problem. The article shows by a series of well selected illustrations how to mask these often unsightly utilities. In an article on "The House That Will Not Catch Fire," there are good suggestions that may with economy be considered by the prospective home builder.

The book has been attractively prepared and will undoubtedly be welcomed by a large class of readers.

* *The Country Life Book of Building and Decorating. Edited by Reginald T. Townsend, Editor of Country Life. 100 pp., size 10 x 13. Garden City, N. Y., and Toronto. Doubleday, Page & Co.*

Modern Theatre Construction*

MR. KINSILA has written a book on the design and construction of theatres which should be of considerable value to architects whose experience in this line is limited. It is not a technical treatise but is rather a handbook full of practical suggestions. The first chapter contains a brief history of the theatre. The following chapters are headed; Controlling Elements, Site Selection, Designing and Planning, The Stage Section, Lighting, Motion Picture Theatres, Safety, Comfort, Heating and Ventilation, Acoustics, Construction, Examples of Theatre Architecture. An Appendix contains ordinances regulating the construction and equipment of theatres in New York and Boston and an ordinance suggested by the National Board of Fire Underwriters.

* *Modern Theatre Construction. By Edward Bernard Kinsila, Architect and Theatre Specialist. 269 pp. 56 Ill. 5 x 7½ in Cloth. New York. Chalmers Publishing Company. $3.00.*

New York's New Registration Bill Becomes Law

GOVERNOR MILLER of New York, has signed the Bly bill, which provides for the annual registration of architects in New York and makes it incumbent upon applicants for certificates to prove to the satisfaction of the State Board of Examiners and Registration their qualifications to do business. Initial certificates are to be issued by the clerk of the county in which the applicant resides. There is a fee of $1.00. A copy of the certificate is to be forwarded to the State Board within a month after the date of issuance. Renewals are made on September 1 of each year by the State Board. The renewal fee is $2.00.

Lists of registered architects are to be published each year and sent to those whose names appear upon them. They in turn are required to inform the State Board in cases where they know of persons doing business as architects whose names do not appear on the list. Violations of the new law for first offense are punishable by a fine of not less than $50 and not more than $100; for second offense from $200 to $500 or imprisonment for not more than one year.

Office Building

Club House

Above: Town House Club, New York City. Starrett & Van Vleck, Architects.

Left: Robertson-Cole Building, New York City, F. H. Dewey & Company, Architects.

Right: Allerton Hotel, New York City. Arthur Loomis Harmon, Architect.

Hotel

For Every Type of Building

Leading architects have learned from experience that R-W *Ideal* elevator door hardware gives ideal service in every type of building. In office and loft buildings it is selected because of its ability to stand up under long, hard usage. In hotels, clubs and apartment houses it is preferred for its noiselessness and dignified appearance.

Elevator Door Hardware

R-W *Ideal* elevator door hardware includes easy-running, long-wearing hangers for every type of door, as well as automatic, self-locking door closers and checks. Doors so equipped close swiftly and silently before the car leaves the floor, thus doing away with accidents and damage suits resulting from doors left open by careless operators. If you do not have a copy of our latest catalog, write today for Catalog D-21.

Richards-Wilcox Mfg. Co.

A Hanger for any Door that Slides

AURORA, ILLINOIS, U.S.A.

Minneapolis Philadelphia Chicago Boston New York St. Louis Cleveland Indianapolis Los Angeles San Francisco

RICHARDS-WILCOX CANADIAN CO. LTD. Winnipeg LONDON, ONT. Montreal

We have engineers at our various branches who will gladly co-operate with the architectural profession in the selection of elevator door hardware.

Quality leaves its imprint

House doors equipped with R-W Vanishing Door Hardware are a genuine economy. They are space-savers, noiseless, and perfect in operation.

League of New York Artists

AS a result of demands from artists and art societies, the League of New York Artists, Inc., will change its name to the League of American Artists, according to a statement given out recently by Julian Bowes, managing secretary.

The League was founded more than a year ago to establish better conditions in the profession and to give professional standing to its members along the lines of the legal, medical and architectural associations.

Height of Buildings in London

IN commenting on the subject of higher buildings for London, *The Architect,* of London, has the following to say:

The London County Council has decided to scrap the restriction on the height of buildings in London, which has been in existence since February, 1910. Under their old procedure the Council, in considering applications for consent to additional cubical extent, laid it down that the height of a building must not be more than 60 feet, measured from the pavement level to the *upper surface of the floor* of the topmost story. The height which in future will be sanctioned is 80 feet, measured from the pavement level to the *underside of the ceiling* of the topmost story. According to the Building Acts Committee this means practically the addition of another story.

The relaxation now sanctioned by the Council is traceable to representations on the subject made by the Royal Institute of British Architects. It is, however, important to remember that the Council is really conceding nothing more than was originally permitted under Section 47 of the London Building Act, 1894. The old limitation to 60 feet was a restriction imposed by the Council in a decision reached more or less arbitrarily on February 22, 1910. The consideration at that time was the difficulty in dealing promptly with fires in the upper floors of high buildings.

An Answer to the Point

A READER of the *Monthly Bulletin* of the Illinois Society of Architects writes the editor as follows:

"Will you kindly give derivation of the coined term 'Realtor' as copyrighted by a sect of the real estate operators of the U. S. A.?"

The editor replies with considerable humor and much truth:

"The word 'Realtor' comes from the English word 'real' meaning 'genuine' and the Spanish word 'toro' meaning 'bull.'"

PERSONALS

Silverstein & Infanger, architects, 188-190 Montague Street, Brooklyn, N. Y., are desirous of receiving manufacturers' samples and catalogs.

Hein & Hauskey, architects and engineers, announce the removal of their offices to larger quarters on the fourth floor of the Builders Exchange, Minneapolis, Minn.

McKenzie, Voorhees & Gmelin, architects, announce the removal of their offices to the twentieth floor of the Canadian-Pacific Building, 342 Madison Avenue, New York City.

The Kenneth H. Gedney Company, architects and engineers, announce the opening of their offices in the Loyal Mystic Legion Building, Hastings, Neb. Manufacturers are requested to send catalogs and samples.

Walter F. Martens, formerly a partner of the firm of Stuebe & Co., Danville, Ill., has opened offices at 212-214 Boyd Building, Charleston, W. Va., for the practice of architecture and landscape architecture.

It is announced that Charles Sorber, of the Department of Architecture, Carnegie Institute of Technology, Pittsburgh, Pa., has been awarded the Pupin Prize by the Beaux Arts Institute of Design, New York City.

It is announced that Georgius Y. Cannon, formerly of the firm of Gunther & Cannon, architects, is now associated with Walter E. Ware and Alberto O. Treganza under the firm name of Ware, Treganza & Cannon, architects, with offices at 610 Utah Savings & Trust Building, Salt Lake City, Utah.

Announcement is made that the firm of Azzarello & Klein, architects, has been dissolved. F. A. Azzarello will continue in practice at the old address, 2573 East Fifty-fifth Street, Cleveland, Ohio. Julius S. Klein has opened offices at 434 The Arcade, that city, where he will be pleased to receive manufacturers' catalogs and samples.

Miles E. Miller, Taylor Woolley and Clifford Evans announce that the firm of Miller, Woolley & Evans, architects, has been dissolved. Miles E. Miller will retain the present offices, 715 McIntyre Building, Salt Lake City, Utah. Taylor Woolley and Clifford Evans will form a partnership under the firm name of Woolley & Evans, architects, with offices at 616 McCornick Building, that city.